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The Architectural Profession.

THAT the architectural profession in England is at present at a somewhat critical point in its career seems to be a fact tacitly admitted by the members of the profession themselves, if we may take as a criterion of their feeling the decided activity displayed in the direction of reform of one kind or another, which is showing itself in several directions among the individuals or the bodies representing professional interests. We have at this moment the two representative societies in London,—the Royal Institute of Architects and the Architectural Association,—making, independently of each other, inquiries and suggestions as to alterations in their constitution or mode of action for the future, with a view to increase their representative completeness or their educational efficiency as corporate architectural bodies. We have at the same time a certain undefined stirring-up of architectural dust by some persons, apparently members of the profession, who are endeavouring to hoist a flag of secession and rebellion, and to set up some sort of new architectural establishment with a sort of signboard flourish of its own; an advertisement in which *mens conscia recti* is mixed up with "no connexion with the establishment over the way." We regard this demonstration, however, as little more than a storm in a saucer, got up to serve the interests of persons who are never content unless they are blowing their own trumpet, and who are only following what has of late become a fashionable habit of advertising in the artistic world, by getting into a small group at the corner of the street and shouting out that everything and every one is going to the dogs except themselves. Demonstrations of this kind generally end in smoke, or in the falling-out of the demonstrators; and if the already existing representative bodies of architects fail to keep up or increase their *prestige* it will be from other causes than the rivalry of a small and apparently obscure but noisy band of oppositionists.

To return to the more immediate subject of the existing fully-constituted architectural societies, the Institute of Architects has been specially concerned just now over several matters of internal reform, various in their nature and importance. One of these, the question as to the election of the Council, is chiefly of importance as striking a blow at the very conservative constitution of the Institute Council, one of the minor matters which tend to fetter and restrict a policy of progression. At the business meeting, ostensibly private, held last Monday, it was announced that the Council, in response to suggestions made at a former meeting and before referred to in our columns, proposed the introduction of a system whereby two members should retire annually from the Council, and if the meeting of the 24th had adopted their proposition they were prepared to move the alteration of By-law XIX. in accordance therewith. Mr. Ridge, however, proposed an amendment, to the effect that this was an insufficient response to the reference made to the Council at the meeting on the 7th of January last,—an amendment which was adopted by the small majority of three, no member of the Council voting for it. It is better that constitutional decisions in a society should be carried by larger majorities, but the result shows a determination on the part of a considerable number of the habitual attendants at the Institute meetings that a wholesome degree of change in the administrative body should be kept up; and it is well that it should be so. Another suggestion which was carried at the last meeting is of more importance in regard to the relation of the Institute to the public, viz., that means should be taken for extending the admission of Associates, who can now enter only by an obligatory examination, to applicants in the colonies, who may not be able to pay a visit to England for the purpose of passing the examination in the usual way: and that such candidates should be privileged to be examined by letter. This is a very important move, as it appears to be a response to a real demand on the part of colonial architects, and a demand which the immediate action of the Institute in the matter will probably tend to increase. A further and still more important movement arising out of the same subject of the obligatory examination for Associateship, is one which contemplates in the end making all membership of the Institute dependent upon an obligatory examination in professional attainments and knowledge.* It appears that, since the establishment of the obligatory examination for associateship, applications to be admitted as Fellows have been received from gentlemen younger and of less professional experience than many who had submitted themselves as candidates for the Associateship. Here was a manifest injustice to those who had elected to pass the ordeal of an examination; and the Council wisely took upon themselves to depart from technical exactitude by refusing or deferring such applications till the matter could be further considered. They believed that many young men, of sufficient ability and education to pass the examination as Associates, avoided submitting themselves to it, on the confident assumption that, if they waited a few years, they could be admitted as Fellows without the necessity of any previous labour or test of merit. Such a state of things being "prejudicial to all concerned," the Council submitted to the general meeting on Monday a recommendation to enact a new by-law, to be numbered XIVA, to the effect that after May, 1887 (which will be the fiftieth year of the incorporation of the Institute), no candidate shall be recommended for election as a Fellow who is not already an Associate, except in the case of such candidates as may, by a special resolution of the Council in each case, be exempted. The final discussion of this important resolution was, however, deferred, owing to the late hour at which it was brought forward, for more leisurely consideration at a future special meeting in the course of next month.

Now, this is a scheme which, if carried, as we have very little doubt it will be, ought to make membership of the Institute really a practically valuable title, much more so than it has hitherto been. The proposition has been regarded with interest, and even with enthusiasm, by some of the provincial architectural societies; the Leeds Society, for instance, sent round a special circular to beg all members who had the best interests of the profession at heart to vote for it. We can only wish that some metropolitan architects showed the same *esprit de corps*. In the present position of the architectural profession such a system of condition of membership of the Institute would be, if generally accepted, the most valuable means of strengthening the profession in public esteem and public confidence that could be desired. It can only fail to be so through the selfish policy of those who refuse to join hands or to remember that unity is strength. We have before said that we are not among the admirers of the Institute of Architects as it exists. We consider it is in many ways behind the times, and requires new life to be infused into it. But it has all the machinery for work as a central representative body: it is making strenuous and very well-considered efforts to improve that machinery; and those who weaken its action and influence with the public by standing apart and refusing to co-operate, are taking upon themselves the responsibility of being stumbling-blocks in the way of the strengthening of the hands of the profession, their own included, by the best practical means available. As to the artistic

* Except when the Council might see occasion to abrogate the rule; as in the case of architects of known and recognised ability who had not previously been Associates.

side of the question, we repeat that if the artistic element is not as well represented as it ought to be in the Institute at present (as it most certainly is *not*), that is in the main the fault of those who allow things to be so; who refuse their own aid and then complain of the deficiencies which they might themselves, if they were less egotistical and indifferent, do much to remedy. The mere fact of the excitement and interest roused by the election of Mr. Street, shortly before his decease, as President, and the exceptionally crowded meeting which his first appearance in the chair attracted, shows that there is no want of persons within the ranks of the Institute to appreciate artistic ability and to show honour to the "art-architects," if they on their part will show any disposition to labour for the good of the republic. If they will not, they cannot expect that the public will show adequate respect to a house which is so suicidally divided against itself.

The sign of movement which we referred to in the junior society, the Architectural Association, is, of course, of less public importance, though its occurrence at this juncture is significant of the general tendency among the profession to turn over a new leaf in some way or other. The Architectural Association was essentially a draughtsmen's society, and the special reason which seems to have moved its president, Mr. Cole A. Adams, to send round a circular asking the advice of all the members as to possible changes and new regulations, is significantly characteristic of this fact. The President of the Association seems to have been rather dismayed by the fact of the great falling-off in the attendance in the classes of design as compared with a recognisable increase in the attendance in the classes of construction. The other matters referred to in his circular are very minor ones, interesting only to those directly concerned. But in regard to this main point we should really rather be disposed to congratulate the Association on having apparently discovered the fact that construction is, after all, the basis of architecture, and that much which is called "design" means really only "draughtsmanship." It may be presumed that a certain number of members of the Association do not attend both classes, and that some who have given too exclusive attention to drawing have felt the necessity of learning more about construction. On the whole, this appears to us to be a satisfactory indication that the Association is in a healthy condition, and that, feeling that architects have in recent days much neglected the practical side of their profession in pursuit of the enjoyment of making effective drawings, some of its members are desirous to restore the balance. On the whole, the Association has as much overweighted the drawing side of the architectural profession as the Institute has overweighted the practical and business side, to the neglect of art. The two must go hand in hand, and be equally studied as the necessary complements of each other, if the architect of the future is to take the same place in public confidence and respect as was gained by some of the eminent architects of the past.

ANOTHER HISTORY OF ANCIENT SCULPTURE.*

THE classical archæologists of to-day fall naturally into four classes; we might, indeed, say they are of four grades. The work of these four grades is essentially distinct in character. Now that works on archæology are multiplying thick and fast, it seems important to distinguish clearly the function proper and peculiar to each. Without such distinction we cannot rightly estimate the value of an author's writings. We are apt to demand what is impossible, or to be content with what is inadequate.

First and foremost there is the archæologist who discovers. From him we have a right to demand, if he is to occupy the first place, the peculiar, incommunicable instinct of the explorer, and the precise, scientific record of the place and circumstances of his discovery. We need not necessarily go further and demand that he should theorise on what he finds. It is frequently better that he should leave the task to others less intoxicated with the new joy,—for him the facts of discovery are so tremendous that opinion concerning them may well seem impertinent. Next, and scarcely of a lower grade, is the archæologist who creates, not fact, but opinion; who sees for the first time, not the monuments themselves, but the significance of these monuments, their historical place, their contrasts and analogies, secret from others, hidden sometimes from the eye of the discoverer. From him the archæologist of the second grade, we ask that his opinion be based on the sober estimate of fact; that he give us, so far as conviction be communicable, a reason for his faith. Sometimes he will speak as a prophet; then we may wait for the confirming evidence of future discovery.

Third, and separated by a vast gap, comes the archæologist of the third class. He absorbs the opinions of others, gives them in succinct and intelligible form to the outside world, selects one opinion from the many as his own choice, and substantiates his preference. From him we demand that he should state the opinions of others accurately, and justify his selection. Fourth, there is the archæologist who popularises his subject. His work is to make the skeleton of fact and opinion live and breathe, to clothe it with flesh, and breathe into it life, so that what was before to the unlearned dry and dead, shall live before him as a beautiful, vital whole, so that the dead men of the past rise and speak before him. What we demand of this fourth archæologist is that his constructive fancy shall vivify without falsifying this past which he has learned to know.

Mrs. Mitchell belongs to the third class, and her work, judged by its standards, is excellent. She lays no claim to the discovery either of fact or opinion, but she has conscientiously, and for the most part accurately, absorbed and reproduced the opinions of others. This may seem slight praise, but when we consider how vast and inaccessible the material, we see that *sui generis*, as a compiler, her rank is high. It is not so much that original thought is strangled in the birth by the mass of alien opinion, as that the quality of mind necessary to the compiler and the thinker are essentially distinct and rarely coexist.

In the preface Mrs. Mitchell claims kinship with our fourth class of archæologists. She says, "I have attempted in the present work to treat the sculptural monuments of the different nations of antiquity, and to build up some semblance of the stately fabric of old. Many, alas! are the blocks still lacking to complete the structure of an exhaustive history of ancient sculpture; but if we surround the mute monuments existing with the faiths out of which they sprang, and pour upon them the light of national custom and thought, they will become eloquent witnesses to the art-life of those remote ages." This hope is never, it seems to us, fulfilled; details many and interesting are given us about the life of the past, but the past never lives again. Mrs. Mitchell has as little instinct for reconstructing form as she has sense of the fitness of language; indeed, we are constantly and painfully made to feel that an author whose style is so intemperate is essentially devoid of that spirit of *σωφροσύνη*, which she herself tells us was characteristic of Greek art. A book on Greek art should surely of any bear the stamp of a beautiful decorum of language. How are we to trust the instinct and judgment of an author who sins against taste by the unmeasurable use of promiscuous adjectives and the coining of new-fangled, impossible words. What, in the name of the English language, are "troves"? Who can bear to be told that over the face of the Hermes of Praxiteles hangs "a delicious veil of soulful interest"? Or that art descends "from the heights of Olympus through *ravishing* vales"?—or of the supposed Demeter (p. 339) that "so noble and ravishing is its beauty that in its contemplation we would hush the murmur of conjecture"? Two of the supposed Fates on the eastern pediment are also of "ravishing beauty," and the third combines "majesty of form with ethereal grace re-echoed interminably in the countless quietly fluttering folds of the drapery." In this drapery Mrs. Mitchell finds subtle tenderness and exquisite harmony, and a dream of beauty and queenly majesty. She is further delighted by the "majestic nude Olympus counterpoised by the fluttering drapery and delicious form of the gently-reclining goddess" at the other end of the pediment. Now it is time that a protest was made against this stringing together of adjectives and adverbs. Exuberant diction is not criticism; indeed, in this particular instance, Mrs. Mitchell's own critical faculty has been completely "ravished" by the fumes of her intoxicating language. She accepts Professor Brunn's theory that the so-called Theseus is the mountain god Olympus, and that the so-called Fates are "personifications of the graceful, fleeting clouds." The theory is, indeed, a poetical one, but it has no shadow of support from artistic tradition. As regards opinion, the snare that constantly besets Mrs. Mitchell is that she cannot soberly view a theory propounded either by Professor Brunn or by his followers, Professor Milchhoefer and Dr. Furtwaengler. Of Professor Milchhoefer's Cretan theory (Anfaenge der Kunst), she says, indeed, that it awaits further confirmation, but so complete is the abstract she gives of his book, that some note of warning should have been sounded that this ingenious fabric is built upon a basis of evidence as stray and shifting as the sand.

We turn gladly from the ungracious task of censure to note what is really admirable in the book. The student of Greek art has before him for the first time a really complete *répertoire* of fact and opinion. Without seeking to thread the trackless paths of German pamphlet and periodical literature he can know fully and precisely what the French have found at Delos, the Germans at Pergamos and Djölbaschi, the Americans at Assos. If he wants to go further let him turn to the "Notes and References," which to the archæologist are the most valuable part of Mrs. Mitchell's book. There he has before him collected, with a fulness and accuracy which are beyond all praise, the whole literature of the subject. Even where, as in one or two cases, the work cited appears to have been left unread or read to little profit, the citation is valuable. These Notes and References are followed by an index of quotations from classical authors and a general index of equal value. Still further we have a table of museums, which should do good service to the travelling student; a glance down its carefully arranged columns will show the student or the intelligent tourist what he has to look for in Berlin, Florence, Munich, Naples, Paris, Rome. When we consider the labour that must have gone to the formation of these tables we do not wonder that the book is the outcome of ten years of patient work, and we are inclined to forgive all other shortcomings, even its lamentable style. The book is profusely illustrated. We have 294 woodcuts of very varied excellence, six phototype plates of great beauty, and an accompanying portfolio of twenty phototype plates. Here at once is a wealth of material for study that the English student has never before possessed. Other books by archæologists of other grades will supply what is lacking in originality, in trained archæological insight, in refined taste. This book of Mrs. Mitchell's is unique as a *répertoire* of material.

* A History of Ancient Sculpture. By Lucy M. Mitchell. London: Kegan Paul, Trench, & Co. 1883.

SCIENTIFIC OPINIONS ON WATER-SUPPLY.

THE Society of Arts has recently devoted one ordinary and two extraordinary meetings to the discussion of the important subject of the national water supply.

On the 12th of March, Mr. Salt, M.P., in the chair, Lieut.-Gen. Rundall, R.E., C.S.I., read a paper entitled "A System of National Water Regulation necessary in regard to

Supply, Floods, Drainage, and Transit." Of this able and exhaustive essay, in which "the experience of a lifetime in dealing with the water question in its several phases" has enabled the writer "to pronounce confidently on both its administrative and engineering features," our limits allow us to do little more than express a general admiration, and a concurrence with the spirit of the whole, as well as with much of the detail. It would, however, be unjust, both to the author, and to the readers to whom we recommend the careful study of General Rundall's paper, to fail to indicate one or two points in which the experience attained on the vast rivers, canals, and reservoirs of India may prove misleading if applied to the water features of England without due modification.

General Rundall advocates the construction of storage basins for the purpose of preventing damage from floods, and of supplying water both for navigation and for domestic use. Where nature has rendered the existence of such basins practically possible, she has not unfrequently herself supplied them, as in the Cumberland, Westmoreland, and North Wales lakes. In the Thames valley the case is very different. General Rundall estimates that basins to contain 8,760 millions of cubic feet of water could be constructed for 3,240,000*l*. But at the depth which he gives of 20 ft. such reservoirs would cover an area of 9,653 acres, or rather more than 15 square miles. The provision and purchase of such an extent of land on the borders of the Thames, even independently of any expenditure on banks, sluices, conduits, and other works, is so manifestly impracticable that it is only necessary to call attention to the figures. Nor is it a question of small differences. A rainfall of 1 in. over the basin of the Thames above Kingston gives, according to Mr. G. J. Symons ("Proceedings Inst. C.E.," vol. xxii., p. 6), a volume of 53,375 million gallons. Although but a small portion of the average rainfall of the year runs off through the ordinary river discharge, the case is very different in heavy rainfalls, when nearly the whole depth of water collected requires immediate discharge. In 1875 the July rainfall over the Thames valley ranged from 4·15 to 6·46 inches; and in October of that year more than 3 in. of rain fell in one day at Banbury. To store 4 in. of rainfall, according to authorities cited by Mr. G. J. Symons in his valuable monograph "On the Floods in England and Wales in 1875" ("Proc. Inst. C.E.," vol. xlv., p. 9), would cost at least 20,000,000*l*. And in the event of a rainstorm occurring when the reservoirs were full, the damage caused by the ensuing flood would be unabated. It is thus clear that in such a valley as that of the Thames the construction of reservoirs as suggested by General Rundall does not come within the practical work of the engineer; and such also was the opinion expressed by Sir R. Rawlinson. The necessity of constituting a central authority for dealing with the water of at least each great system of river outflow, to which attention is called in the paper, has been long since fully advocated in the columns of the *Builder*. It may be said to be now fully admitted, as a controlling principle, by every competent authority on the subject, with the unfortunate exception of Parliament. As to the last head of General Rundall's paper, that of transit by inland navigation, the evidence, to which the General himself contributed, taken before the Select Committee on Canals is of conclusive weight. Mr. Salt, the very able chairman of that committee (who presided as before mentioned at the meeting), justly remarked "what was really wanted was a strong board of men thoroughly conversant with water matters, and having powers to deal either with the whole country or with very large areas." We have as yet heard nothing as to the re-appointment of Mr. Salt's committee during the present session. What has already been done has so far narrowed the entire range of the questions raised by General Rundall, that they may be said to have passed out of the region of vague speculation. The outcome of the study of the subject, for a series of years, is to a great extent definite and undenied; and what the country now requires is, not so much that further inquiry should be made, as that legislative sanction should be given to those great principles of water regulation which, long since admitted and acted on in Italy and France, are fully accepted by English engineers; and are uncontested, except by that spirit of general supineness which it seems to require great disasters to overcome.

The evenings of the 13th and the 21st of March were occupied by the Society of Arts in the discussion of a paper by Dr. Percy Frankland on water supply. The title of the paper which the members were invited to discuss was "The Upper Thames as a Source of the Water Supply of London," but nothing was said by the lecturer as to the Upper Thames. The aim of the paper was to show that the admission into a river of either crude sewage, effluent water from purified sewage, or surface drainage from manured fields, was a source of danger to human life and health for which the chemist could suggest no remedy; and that river water ought for that reason to be abandoned as a source of supply for domestic use, deep wells being resorted to instead. The tables and diagrams exhibited in support of this view were of rather ancient date, and nothing was brought forward by the lecturer with which the students of the subject were not already fully familiar.

Sir Lyon Playfair, who occupied the chair, expressed a doubt as to the quantity of water obtainable from the chalk,—a point on the determination of which any practical issue from the statements of the lecturer must altogether depend. Mr. Norman Bazalgette altogether opposed the argument of the lecturer, and referred to the steps which had been taken by the Metropolitan Board of Works for the protection of the river, and to the eminently healthy condition of the metropolis, as shown by the death-rate. Sir F. Nicholson, on behalf of the Conservators of the Thames, referred to the measures taken by that body for the purification of the river; and it was further pointed out that a sacrifice of more than twelve millions sterling for the object of obtaining an imaginary supply of water was not a subject for serious discussion.

On the second evening Dr. Frankland spoke in support of the lecturer, without adducing any new points in support of his well-known views. Dr. Meymott Tidy, in a very long and very energetic speech,—many parts of which convulsed the meeting with laughter,—adduced the results of several thousand analyses made by himself and by Dr. Odling, Professor of Chemistry at the University of Oxford; and gave facts in support of the opinion that river water purified itself by oxidation, in the course of a comparatively short distance of natural flow. Mr. Cresswell gave some details of what is being now effected at Aylesbury, for the purification of sewage; and complained of the figures exhibited by Dr. Percy Frankland as "antediluvian." Dr. Jabez Hogg entirely contradicted the statements of the preceding speakers to the effect that the morbific poison said to be communicated to water from sewage could not be detected by the microscope; and described the various forms of microscopic life which were the product, and the cause, of different diseases, which he further stated to be, as far as was known, indestructible by any applicable process. The chief instance brought forward, however, was one taken, not from any river supply, but from the contamination of a well at Caterham. The discussion was adjourned until some day after Easter.

It is evident that, in order to derive any practical utility from a debate of this description, the question of the natural limits of supply, which was entirely left out of sight by almost every speaker, assumes a controlling importance. Nor does it seem to be a matter at all conducive to sanitary reform to devote evening after evening to the discussion of questions of transcendental chemistry, in which eminent chemists are in discord, both with each other and with medical men, at a time when the subject of the best mode of destroying the poison of sewage, and of rescuing the Thames from the terrible pollution to which it is now exposed at Barking, has assumed a shape which presses for a practical solution. That the germs of disease are readily to be detected by the microscope is, if invariably true, a matter for congratulation. But men of science must cease to contradict, not only one another, but themselves, before they can expect that the public will listen to statements which as yet only go so far as to suggest cause for panic, rather than practical efforts for improvement.

NOTES.

WE have received notice of the forthcoming publication of a work of considerable interest by Baron Geymüller, to be entitled "Raffaello Architetto," or, in the more detailed record of the title-page, "Raffaelle Sanzio studied as an Architect, by the aid of New Documents." Raffaelle, of course, was not essentially an architect; that is to say, he had not the true feeling for the constructive basis of the art, without which architecture becomes only a plaything; unless, indeed, any of Baron Geymüller's "new documents" should contain matter to alter our convictions in this respect. But he seems to have had the power of direct and unaffected expression in architectural design, as shown, for instance, in his front of the Pandolfini Palace, with its elegantly treated windows, contrasted with the heavily rusticated doorway; and, at the least, everything about him and his artistic developments must be of interest in one sense or another. Those who are acquainted with Geymüller's splendid work on Bramante, reviewed at length in our pages some time back (vol. xl., p. 263), and remember the remarkably interesting matter contained both in the illustrations and in the text, will consider his name as editor of the Raffaelle documents and drawings in itself a guarantee that the promised publication will be of no ordinary value.

ANOTHER architectural publication, which should be of some interest, from specimens of the plates which we have seen, is "L'Architecture en Suisse, aux Différentes Époques," consisting of various remains collected and published by MM. André Lambert and Alfred Rychner, architects. It is to include fifty-seven plates, executed in ink-photography, in imitation of washed Indian-ink drawings, but far more fine and delicate in texture and effect than any process adopted for architectural publications in this country, which seems to be sadly behind the Continental lithographers in these methods. On the other hand, the drawings illustrate, in their style and feeling, that peculiar mechanical precision characteristic both of French and German architectural illustrations, to which we referred the other day in an article on the subject, and which gives to some of their illustrations rather the aspect of working-drawings than of delineations intended to show the real effect of the structure as it would appear to the eye. In their own style, however, the illustrations, as far as we have seen, are admirably executed, and the work will apparently represent some rather unusual and out-of-the-way architectural details and combinations, showing how Renaissance architecture posed herself on the free soil of Switzerland, with a certain interesting and quaint licence of style. The work is to be published by Herr Georg, at Basle.

THE long dispute and subsequent litigation between the River Lea Conservancy Board and the Corporation of Hertford has resulted in the delivery by Mr. Justice Williams, on the 22nd inst., of judgment for the defendants (the Corporation of Hertford), with costs. The able and careful summing up of the judge on the whole evidence went to show that the Corporation, exercising the powers originally conferred on the New River Company, and in 1868 transferred to the Hertford Corporation, had the right to discharge the effluent from their sewage works into the Lea, on the condition that they adopted the best known process of purification, and carried out the work in the

most efficient manner. The Conservancy Board appears to have been unable to establish, by the evidence of their own experts, that the Corporation could be said to have failed in either of these undertakings. They fell back upon the fact that there was a bank of offensive mud near the outfall of the sewage carrier, known as the "Manifold ditch," into a nearly stagnant, or at least very sluggish, backwater of the Lea, and ascribed this to the effluent, while admitting that the effluent on leaving the sewage works satisfied the most rigorous tests for every purpose short of being used as drinking-water. As to the offensiveness of the said bank of mud, the evidence seems to have been exceedingly contradictory, and that which would connect it with the effluent merely presumptive. "The scientific witnesses on the part of the defendants showed that there was absolutely no chemical difference between the water of the Lea before and after the water of the Manifold ditch joined it." This goes to confirm what we observed the other day in regard to the scare about the Lower Thames Valley drainage scheme, that if the best means of purification were employed, we did not believe those who used the river for recreation would ever know that the effluent water was in it if they were not told. We draw attention to the subject partly on account of the misleading comments on the case on the part of some of the daily papers, which either took no trouble to understand the real bearing of the evidence, or suffered under inherent incapacity to do so.

THE Kyrle Society held a meeting in the Rubens Room at Grosvenor House last Monday, the Duke of Westminster presiding, when Miss Octavia Hill read a paper describing the objects of the Society, which are, probably, better understood and appreciated now than formerly. Partly, perhaps, from a too great admixture of the class of sentimentalists who have been christened "æsthetes," as collaborators, the Society gained in some quarters, not quite without reason, the credit of being a kind of institution for painting dados on the walls of "the dwellings of the poor," and generally bringing them into harmony with "æsthetic" tastes and habits; and, as this was to be done free of expense to the recipients, it was somewhat difficult to distinguish this from a species of artistic pauperisation. But Miss Hill's paper on the present occasion showed that, in her view at least, the objects of the Society are both wider and more practical than this. For example, she mentioned that during the past year three disused burial-grounds had been handed over to the Society to be laid out, previously to their being taken over by the several vestries of the parishes in which they stood, and funds amounting to 700*l.* had been collected, which would enable the Society to complete all three. Arrangements had been made for their taking in hand another such garden in a very crowded neighbourhood in the south of London, at a cost of about 300*l.*, of which 50*l.* was already in hand. Besides the living colour of flowers, they are trying to introduce suggestive inscriptions in mosaic on the blank walls which often bounded the gardens. The Society has also given musical performances, by means of its own choir and volunteer assistance in the poorer quarters of London, which, as we have had occasion to know, have given much pleasure to large audiences whose geographical and pecuniary conditions alike put them out of the power of hearing good music under ordinary circumstances. This is truly philanthropic work in its spirit and its present results. We only use that qualifying expression in order to point out that, on true social principles, such voluntary dispensing of the decorations and beauties of life ought to be regarded only as a temporary expedient for awakening the minds of the less educated and poorer classes to such beauties, in the hope that in time they will develop the spirit and the means to bring their own exertions to bear in providing these means of rendering life brighter and more enjoyable. Any schemes for doing this for them, without exertion or expense on their part, ought to be regarded as in their nature temporary; and here, probably, Miss Hill will not disagree with us. But at the present moment the mere awaking the minds of the people to see the beauty of nature and art is an admirable and almost necessary work, preparing the way, we may hope, for a more permanent enlightenment.

AN inquiry was commenced on Wednesday last, the 19th instant, and was continued on the following day before Sir Henry Arthur Hunt, C.B., at the Surveyors' Institution, Great George-street, with reference to the notice served upon the owners of the National Standard Theatre, Shoreditch, by the Metropolitan Board of Works, under the powers conferred upon the Board by the 11th Section of the Metropolis Management and Building Acts Amendment Act, 1878 (41 and 42 Vict. chap. 32). Mr. Frederick Meadows White, Q.C., instructed by Mr. Thomas Burton, appeared for the Board, and Mr. Mansell Jones appeared for the appellants, Messrs. John and Richard Douglass, the lessees of the theatre. The points in dispute related to the construction of the staircases from the balcony level to the upper circle, the provision of a new staircase to the gallery, the separation of the theatre premises from premises in other occupation, and some minor matters which were not seriously contested by the appellants. On behalf of the Board Mr. John Hebb, the Assistant Architect to the Board, Mr. John Whichcord, Mr. Henry Currey, and Mr. Francis Rider were called as witnesses, and Mr. C. J. Phipps, Mr. Henry Lovegrove, and Mr. Richard Douglass gave evidence on behalf of the lessees. The arbitrator viewed the theatre on Monday last, but has not yet made his award.*

IN 1880 the Corporation of the City of London invited designs for statuary to be placed on the four pedestals of Blackfriars Bridge, and offered six premiums,—viz., two of 250*l.*, two of 150*l.*, and two of 100*l.*, the models for which the premiums were to be paid becoming the property of the Corporation. In response to this invitation some fifty designs were sent in, but they were not exhibited to the public. The premiums promised were duly paid, but nothing further resulted from the competition. It is now stated that the Corporation have resolved to adorn the four pedestals with four equestrian statues, and have abandoned their original intention of completing the bridge by the erection of allegorical groups of sculpture, on account of the expense. Professor Fabbrucci gained one of the premiums of 250*l.*, for a design representing the Triumph of the City of London, which was much admired at the time; but we understand that Mr. Fabbrucci has not been given a commission for one of the equestrian figures, as he might reasonably have expected would be the case. The whole matter appears to be utterly mismanaged, or else "managed" in another sense. On the utter unsuitability of the existing pedestals for any statue which could be put upon them we have before commented.†

A CASE of some importance was decided in the Leicester County Court at the close of last week, bearing especially upon the question of provision for the carrying off of storm water in a sewerage system. Mr. Cooper, a tradesman in Leicester, had suffered what appears to have been a very serious and indeed intolerable nuisance, accompanied by considerable injury to his trade, by the rising of sewage, as he described it, in his basement on several occasions of heavy rain during last year; "the sewage rose in a water-closet in the basement and spread all over the basement, rising to a height of nine inches;" and in subsequent rains this very unpleasant visitation was repeated in a more aggravated form. Of course it is incorrect to say that "the sewage" rose; what rose into the house was storm water carrying sewage matter with it. Mr. Cooper sued the Corporation for damages to trade and premises to the extent of £25. The defence was that no negligence could be shown on the part of the Corporation in the construction of the special sewer in question, or in not keeping it in proper repair; that the nuisance arose from an exceptional flow of storm water, which the capacity of the sewers was not sufficient to carry away at once, and that the blame, if any, was chargeable upon the whole sewerage system, not upon special negligence in regard to maintaining the works. The jury found for the Corporation, who did not, however, claim costs. It seems probable from the report of the case that the basement in the plaintiff's premises may have been exceptionally low; it had for some years been subject to flooding. With every sympathy for the plaintiff's position, we hardly see that the finding could have been otherwise under the circumstances. It is pretty generally agreed among the best authorities on sewerage systems that it is not advisable, on practical or on economical grounds, to construct a whole system of sewerage of such capacity as to carry off exceptional flows of storm water.

A CORRESPONDENT of the *Pall Mall Gazette*, under the signature "W. P.," writes to suggest that what he rightly calls "Stevens's magnificent monument" to the Duke of Wellington should be placed in front of the cathedral, after the removal of the Queen Anne statue, and completed by its intended equestrian figure; so that, *en plein air*, and with plenty of space around it, the work would really be seen, instead of being poked away into a corner in the worst possible light, as it is at present. There is no doubt the position would be a splendid one, but it is a question whether the bronze sculpture is not too artistically valuable, and some of the ornamental detail (*not* the best part of the work, by the way) too delicate, to be exposed to the tender mercies of the London atmosphere. The work was intended unquestionably to be under cover, and executed with that idea; and if we look at the effect of the exterior atmosphere of London upon other bronze statues which we might be very happy to lose, it is doubtful whether we should be doing wisely to expose to its influence one of the very few great monumental works which modern art can boast. Considering the density of the average English mind on these subjects, however, it is gratifying to meet with even one correspondent in a daily paper who knows that Stevens's work is a great one, and is aware that it is "altogether wasted" at present.

CONCERNING this same national density upon subjects of this class, we had a fresh reminder the very next day, in the discussion in the House of Lords on Lord Strathden and Campbell's motion that the other Duke of Wellington statue, the *bête noire* of recent art discussions, should not be moved out of London, and that a humble address to that effect should be presented to her Majesty. Against the feeling that the statue ought, as a matter of association, to remain in the neighbourhood of Apsley House, we have nothing to say; it is a natural one enough, and we were disposed to recommend it until the Aldershott suggestion seemed to promise a site at once suitable in association and in regard to scale. But in the process of this same debate did two noble earls, those of Galloway and Hardwicke to wit, declare that they could not understand, now the arch was rebuilt, why the statue was not put up there again or why its position there should be objected to. We, for our own parts, have explained why three times since the recent rebuilding of the arch first brought the subject into fresh discussion; we know not how many times previously; but there,—we give it up.

AT the annual dinner of the Institution of Civil Engineers, on Wednesday evening, the speeches turned very much on the subject of education, of course on its scientific side, and the advantages of a more thorough grounding in the principles of mechanics, as part of an ordinary liberal education. Such different speakers as Earl Granville and Sir Lyon Playfair sounded the same string on this subject, though touching it, we need not say, with a very

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* We print elsewhere the structural alterations required, in full, as of some interest to those who may have to build or may become owners of theatres in the future.

† See *Builder*, p 5, *ante*.

different hand. Engineers are, on the whole, a little too much inclined, we think, to regard life from an engineering point of view, and hardly require encouraging on that head; but it is unquestionable that a larger infusion of mechanical science into general education is much needed; and if that species of educational reform were accomplished, one result of it would probably be that we should have less of that foolish sentimental outcry constantly made against new railways and railway directors, engineers, and contractors, by people whose education, and consequently their sympathies, are so one-sided that they cannot in the least understand the great interest of engineering work, the energy, the talent, and the high moral qualities even which it calls into action both on the part of principals and subordinates, and appear almost to prefer to be stupidly blind on the subject.

THAT Mr. Albert Moore has been elected a member of the Royal Society of Painters in Water Colours is, or should be, rather a subject of congratulation to the Royal Society than to Mr. Moore. With all the interest and beauty of their exhibitions in regard to landscape painting, the Society are very short of high-class figure-painters. They have no one to pit against Mr. Linton, the Coryphæus of the rival Society, although they are much stronger all round. We are not forgetting Mrs. Allingham, but her exquisite works are rather idyllic combinations of figure and landscape than figure-pictures in the stricter sense. Mr. Tadema contributes little now, and does not put forth his strength in the Society's exhibitions; and Mr. Walter Duncan has been unequal and rather disappointing. Mr. Burne Jones they drove away, in foolish deference to a fit of prudery on the part of some "Philistines." So there is a pretty clear field before Mr. Moore for some new developments in the gallery in Pall Mall East.

SPITALFIELDS MARKET.

WITHIN the past few weeks Columbia Market, in Hackney-road, has received what gives every promise of proving a valuable stimulus to its waning fortunes. The fruit and vegetable salesmen have removed hither from their stalls underneath the Great Eastern Railway goods station at Bishopsgate Without. Their migration followed upon a recent decision of the Court of Appeal,—Goldsmid *v.* Great Eastern Railway Company, when Lords Justices Cotton, Lindley, and Fry gave unanimous judgments. Briefly stated, the facts are as follow. Sir Julian Goldsmid, lessee, with others, owners of Spitalfields market and market estates, claimed franchise to sell vegetables and fruit under certain charters of Kings Charles II. and James II. In 1881 the railway company adapted the arches beneath their new goods station at Bishopsgate into a mart or depôt and let them to dealers in fish, vegetables, and fruit. The plaintiffs contended that these proceedings interfered with their own market and market rights. They obtained an injunction in Vice-Chancellor Bacon's Court accordingly. On the appeal an interesting point came forward which had not arisen in the court below. The defendants obtaining leave to adduce fresh evidence, cited a statutory charter of 1st Edward III. In that the king, with the consent of Parliament, concedes to the London citizens, among other rights and privileges, that no market within seven miles round about the City of London should be granted by the king or his heirs to any one. In 1682 Charles II. granted by charter to the plaintiffs' predecessors in title the right to hold a market in or about Spital-square, on Thursdays and Saturdays. In 1688 James II. granted to the then owner of that market and market franchise the right to hold the market on Mondays, Wednesdays, and Saturdays in lieu of Thursdays and Saturdays. The defendants urged that both the charter of King Charles II. and that of King James II. are void, as being in derogation of King Edward III.'s grant, for which latter they claimed the force of an Act of Parliament. Further that if they are not void on that ground they have been destroyed by statute 2nd William and Mary (Bill of Rights), which avoided grants made by the Crown, in violation of civic privileges, since a certain judgment of 1683,—one year later, be it observed, than the prior grant by King Charles II. The hearing of the appeal lasted over five days. In the result the Court held that there being evidence of user since 1723 at latest, and no evidence of dissent by the Corporation, they must be held to have consented to the grant of Charles II., and to have waived their rights under Edward III.'s charter,—which they were at liberty to do though it had the force of an Act of Parliament; but that James II.'s charter, being directly within the Act of William and Mary, was avoided; though the plaintiffs were not thereby prevented from relying upon their earlier rights. The Court also held that the plaintiffs' rights to hold their market in the streets about Spital-square were not affected by various Acts of King George III.'s reign,* inasmuch as those acts were merely for the prevention of certain nuisances and did not diminish existing rights. And further that though what the defendants did was not sufficient to constitute a market franchise, and no tolls were taken, yet the defendants had set up a rival place of sale, and provided a concourse of buyers and sellers sufficient to constitute a disturbance of the plaintiffs' market and to justify the action. So the appeal was dismissed, the effect being that the plaintiffs were declared to be entitled to hold markets on Thursday and Saturday for the goods named†; and the defendants restrained from so using their station as to interfere therewith. Mr. William Burdett-Coutts, in welcoming the Shoreditch salesmen, said that, together with its developed traffic in fish, no efforts would be wanting on his or the Baroness's part to make Columbia Market the permanent home of the potato and other vegetable trade in East London.

Thus far concerning the lessees or owners of Spitalfields Market. Another proprietorship is called in question,—we mean that of the public,—by certain pending proposals apparently based upon the judgment of the Appeal Court, to appropriate the site and change the character of the street market here held. The site stands a short distance westwards of Christ Church, Spitalfields, being bounded by Lamb-street (north); Brushfield-street (late Union-street), here formerly Paternoster-row (south); Red Lion-street (east); and Crispin-street (west). King Charles II.'s letter of April 24, 1682, to the Sheriff of Middlesex, inquires whether prejudice would arise from the granting to John Balch, his heirs and assigns, of a market on Thursday and Saturday "in or next to a certain place called the Spittle-square in the parish of Stepney, otherwise Stebunheath." The reply sets forth that it will not be to the damage of the said Lord the King, &c., if the markets be held "in the place called the Spital-square." Now the Spital-square named in the letters patent following on this correspondence (29 July, 1682) is not the locality which is so named at this day; that is to say, the square, formerly known as Spital-yard, in Norton Folgate. It is portion of the ground, in the position we indicate, which was afterwards covered with houses for the accommodation of the French refugees who settled here on the revocation of the Edict of Nantes, 1685. These buildings, nevertheless, were once known as Spital-square, and would seem to have retained that designation until it was transferred, *circa* 1720, to the neighbouring Spital-yard.‡ On 22nd September, 1688, further letters patent issued to one George Bonn. These, after setting forth the original grant and reciting that Bonn was then seised of the market, market rights, and premises, substituted a market, to be held on Mondays and Wednesdays, for the previous Thursday market, ratifying the existing Saturday market. A patent of this later date, which touched the rights of the Corporation, would come within the purview of the Bill of Rights (1690) to which we advert above. So the continuance of the market to the present day goes to prove that the civic authorities did not, or could not, regard it as an encroachment upon their own dues and prerogative. At the same time we gather that the mart itself has never been other than a public street market of the kind with which all wayfarers in the East End are familiar. No mention occurs of a market, or of any private market rights, in certain local Acts passed since Christ Church became a parish distinct from Stepney. On the other hand, record exists that the booth and stalls were occasionally removed during the past 150 years or so; and that on more than one occasion force was employed where buyers and dealers alike failed to keep the peace. The market-place has been recently covered with a glass roof, and the surrounding tenements are in course of re-erection.

Since famous for the not infrequently polemical "Spital Sermons," which were preached from the pulpit cross often mentioned by Foxe, the priory and hospital of "our blessed lady St. Mary" was originally founded (1197) in a locality then styled Lolesworth, by Walter Brune, sheriff, and Rosia his wife, for canons regulars of St. Augustine. Lolesworth had been a Roman burial-ground, and was, perhaps, used by the Saxons for a similar purpose. Stow gives an account of the coins, urns, bottles, unguent phials, &c., which came to light on the breaking up, *circa* 1576, of Spittle Fields, for clay wherewith to make bricks.* Passing to the Crown at the Dissolution, when this Domus Dei et Beatæ Mariæ contained as many as 180 aged and infirm almspeople, the hospital subsequently gave place to large town houses, once greatly in favour with ambassadors from foreign parts. At the north-eastern corner of Spital-square stood the pulpit cross, before which, in 1594, a gallery was erected for the governors and boys of Christ's Hospital.† It was destroyed during the troublous days that preceded the Commonwealth; whilst the sermons, though resumed at the Restoration, were transferred to St. Bride's, Fleet-street, and thence, having been reduced to two in number, to Christ Church, Newgate-street, at the end of last century. Held in great repute, the Spital sermons were always attended, like those at Paul's Cross, by the lord mayor and aldermen, who sat at the windows of a fair-built house, according to Newcourt, near the pulpit. Trollope, in his "History of Christ's Hospital," derives the civic festivities at Eastertide from the private dinners given by the lord mayor and sheriffs at the close of each day's solemnities to such of the aldermen as had taken part therein. Nor were higher personages absent. In April, 1559, Queen Elizabeth returned in high state from the Spital, attended by a thousand mailed men-at-arms and ten pieces, through London to the Court, with martial music, two morris-dancers, and two white bears in a cart. Bagford, in Leland's "Collectanea," describes the priory as then standing, being strongly built of timber, with a turret at each angle; north of the now square which covers the hospital yard the foundations were laid bare early in the eighteenth century. Little else connects the square with the past, though we may add that in one house lived Bolingbroke, the "St. John" of Pope. Culpepper, the herbalist, occupied a house then in the Fields, and subsequently a tavern at Red Lion-court corner. Lilly, the astrologer, announces his particular wares for sale in the "Faire at Spittlefields," whereof an account is contained in a rare pamphlet at the British Museum; and Paternoster-row, a turning southwards out of Brushfield-street, is, some would say, the locality of Tarleton's ordinary, rather than the row by St. Paul's. The old Mathematical Society, removing in 1735 from the Ben Jonson's Head, Pelham-street, had large apartments until 1845,—when they made over their books, records, and memorials to the Royal Astronomical Society,—in Crispin-street (see Weld's "History of the Royal Society"). It is curious to observe how slowly the growth of London extended in this direction for a long period. The Spital, or rather the houses which arose on its ruins, stands remote in a map of 1572; in Aggas's map, planned six years later, the Spittle Fields appear as a large space, open to the country, occupied by archers and by the cattle, of which Hughson writes as feeding here in 1670. And so, with but slight change in various maps, one or two of them being French maps, ranging from 1610 (Norden's) to 1725 (Bowles's) and 1726 (Hollar's by Oliver), whilst in Faithorne's map Clerkenwell, Shoreditch,

* 12 Geo. III. c. 38, 28 Geo. III. c. 60, and 57 Geo. III. c. 29, for regulating and paving the streets round Spital-square, and which forbade the placing of carts, &c., therein, except for the purposes of unloading and loading.

† Hatton speaks (1708) of Spitalfields Market as one "fine for flesh, fowl, and roots."

‡ In maps of 1716 and 1720 the now market site is named "Spital Market" and "Spittlefields Market," respectively.

* Some stone coffins, also disinterred here, were deposited in the vaults beneath Christ Church.

† For their first visit here the scholars adopted their blue coats and yellow stockings.

and Whitechapel form the north-eastern limits of the town. But though the Artillery Company's former artillery-ground (whence the street and lane of that name, with Gun and Fort streets), Bethnal-green, and Spitalfields remained as grass-land within the last 150 years, the influx of the Walloon and French "strangers," as our own artificers would call foreign workmen, created a new settlement about Spital-square. These increased so rapidly that St. Dunstan's, Stepney, could no longer meet their needs. In 1693 Sir George Wheler, prebendary of Durham, built the chapel,—consecrated, 1842, as St Mary's,—in Spital-square, close to the site of the Cross, whilst in 1728–9 was erected, at an initial cost, it is said, of 60,000*l.*, Christ Church, of stone, from a design by Hawksmoor.*

The annals of the Spitalfields weavers form an interesting chapter in the domestic history of London. Their antecedents may yet be recognised in the Anglicised surnames of a few master-hands; for instance, King (Le Roy), Young (Le Jeune), White (Le Blanc), Cooper (Tonnelier), and the like; whilst many existing families, including the Chabots, the Desormeaux, the Ouvrys, Bonveries, Laboucheres, and the Turquands trace their descent from their first refugees of 1685. But the actual craftsmen are, for the most part, purely English in blood. Their houses are plainly distinguishable by the large windows on the upper floors. They are famous for their capture and training of British songsters,—larks, linnets, and finches. Their custom of singing whilst working at their looms, like to the Protestant woollen weavers from Flanders, is cited by Sir John Falstaff,—"I would I were a weaver; I could sing psalms or anything"—("King Henry IV.," first part, act ii., sc. 4); and Ben Jonson's Cutbeard says in reference to the Parson's rheum, "He got this cold with sitting up late, and singing catches with cloth-workers" ("The Silent Woman," act iii., sc. 2). The emigrants and their descendants have not wanted for eleemosynary advantages. The French Hospital and Dispensary, which was opened in 1867 at Leicester-place, Leicester-square, had been preceded by the Asylum in St. Luke's,† where four acres were bought from the Ironmongers' Company, 1716, with De Gastigny's endowment. De Gastigny was Master of the Buckhounds to William III. when Prince of Orange, at "The House in the Wood" in Holland. The Toulon merchants largely contributed to the support of the "Old French Protestant Hospital." By 1760 the Governors could provide additional room for nearly 240 in-patients. This institution was lately transferred to new premises in Victoria Park, Bethnal Green, planned by Mr. R. L. Roumieu, architect, himself a descendant of the Huguenot Roumieus of Languedoc. At the first performance of the Covent Garden pantomime for poor children two years ago there attended a school of girls, each of whom could claim an ancestor among the early Protestant refugees to England.

We should add that since this article was written, the Attorney-General, at the relation of the Whitechapel Board of Works, brought an action against the now lessee for confining the mart within certain limits. At the end of a four days' hearing, Mr. Justice Stephen gave judgment for the relators, and granted an injunction to restrain the defendant from putting vehicles, &c., in the four streets around the market-square on any day, and from so using the four inner approaches (North, South, East, and West streets) on other than market days. His lordship meanwhile suspended execution of the injunction, pending appeal by the defendant.

"Bartolozzi" Decoration. — Under this title Messrs. Morant & Co., of Bond-street, are utilising some plates of original ornamental designs by Bartolozzi, which they have acquired, by reproducing them as panel and pilaster ornaments, imitating, at the same time, the effect of Bartolozzi's stippled grounds. The designs do not differ materially from those of the Adams and their school; they make pretty drawing-room and boudoir decoration, and derive some additional interest from their connexion with the famous engraver's name.

* In this church, for which considerable sums have been spent since its consecration, is an early work of Flaxman, a whole-length figure of Sir Robert Ladbrooke in his robes as Lord Mayor.

† This French Hospital stood in Pesthouse-row, St. Luke's, opposite to Peerless Pool, and north-west of the St. Luke's Hospital after its removal to the northern side of Old-street, near the Dog House Bar. The City Pesthouse, opened here for sufferers from the plague, continued until 1737.

EXHIBITION OF ECCLESIASTICAL EMBROIDERY.

SCHOOL OF ART NEEDLEWORK, SOUTH KENSINGTON.

THE present loan collection is in some ways a new departure from the exhibitions that have preceded it, this being entirely confined to embroidery for ecclesiastical purposes.

Various types of needlework are well displayed, and although it does not seem to have been possible to arrange the several pieces in classes,—an arrangement which would very much assist the student,—yet a little industry will enable the development of any type to be readily traced. Of the fine Italian work produced at the very end of the fifteenth and early part of the sixteenth centuries but few pieces are shown. This is to be regretted; for at that period *appliqué* work, combined with embroidery, of singularly noble design and the finest execution, was general,—soon, alas! to give place to a heavy and loaded treatment, quite out of character with needlework. An immense quantity of this work has of late years been brought from Italy and Spain into Paris and London. It consists almost entirely of ecclesiastical vestments, and we testify our respect and admiration by cutting out the "pretty pieces" and turning them into chair-backs, &c. No. 160, lent by the Duke of Westminster, is a notable example of fine embroidery of this period. It is a chasuble, of pale red velvet ground, embroidered in gold and silver. Some of the leaves show a few strokes of paint instead of needlework on them. This is now mounted as a screen, and loses much of its charm through being strained so tightly.

The South Kensington Museum lends several fine pieces of the same school.

The gradual decay of the art may be noted in several specimens exhibited, until we find ourselves before such absurdities as the set of panels, No. 180, representing events in the lives of various saints, who, with exquisite complexions painted on silk, are attitudinising in every direction; or the still more debased piece, No. 110, which is described as an altar-piece. It may perhaps have been a frontal, and is divided by twisted pillars, raised in half relief, and covered with coral and garnets, into five panels. It would not make, if translated into wood, a bad chest front. It suggests the coarse overloaded style of Naples.

Hanging immediately above the last is a noble example of embroidery, No. 172, now the sanctuary carpet at St. George's (R. C.) Cathedral, Southwark. The way in which the Italian was influenced by the embroiderers of Persia is in this piece very clearly to be traced. Another example of this class of work, in which the ground as well as the decoration in needlework is to be seen, is a chasuble, No. 148. The design of this piece does not owe anything to the East, but the workmanship,—a long stitch sewn down,—shows how sumptuous an effect may be obtained by a very simple treatment of the material.

No. 173 is an example of a totally different treatment of silk, namely, in "cushion stitch." It is described as Sicilian, which we should beg leave to doubt. The type of work is more properly Venetian. Another specimen of the same type is No. 9, curtains of a sanctuary from a synagogue. This shows marked Eastern influence in the simplicity of its treatment and the absence of any efforts at direct imitation.

An interesting collection of work is contributed from the synagogues in the form of mantles for the scrolls of the Law. Most of these are too modern to be worthy of much attention, but some pieces of Portuguese origin are very sumptuous, although not pure specimens of embroidery. The City Companies' palls are in great force; and although they have been from time to time exhibited elsewhere, there are no pieces exhibited which better deserve the closest study.

Amongst the ecclesiastical vestments, Nos. 72, 73, 74a, and 80, lent by the Bishop of Southwark, are deserving of regard. They are much made up; in some instances cruelly "restored" and decorated,—"save the mark,"—with the most tawdry laces, but are of extreme value. No. 94 is one of the earliest Mediæval pieces in the collection, and has gone through great vicissitudes, having begun its existence as a cope, and survived as pulpit-hangings. Of this class, No. 98, lent by Mr. A. W. Franks, is perhaps the gem of the collection. It is a fine piece of English embroidery, date,—according to the catalogue,—1300. On it is MCCCXC. ROMA; but the style shows it to be earlier than the end of the fourteenth century. A short time since photographs of a cope preserved in the Cathedral of Pienza were exhibited at the Society of Antiquaries. This vestment is in perfect preservation, is undoubtedly English, and is a proof, if such were needed, of the esteem in which works of English embroidery were held in Italy. The piece lent by Mr. Franks is, in style, stitch, and design, identical with this cope, and, doubtless, was made at the same place. There are numerous pieces exhibited deserving of close attention; but space will not permit us to describe them.

FIXTURES.

IT is an unfortunate feature in a system of law if important terms have a doubtful meaning, and it must be admitted that in English law the word "fixtures" will be found to be used in quite opposite significations. This is to be regretted, because it is a term which is of every-day use and of practical importance in the lives, some time or other, of most people, and as long as there is uncertainty as to the legal meaning of the term, to a certain extent there must also be the uncertainty which exists in the minds of many as to what are comprised within the term "fixtures." In the third edition of Amos and Ferrard on "Fixtures,"* which is very welcome, since the second edition was published so long ago as 1847, and which is a most useful and necessary work for any one who has from time to time to consider the subject, the conflict between the opposite meanings of the word "fixture" will be very clearly seen.

Primarily the ordinary reader would suppose that the word meant things which were fixed to the ground so as to be, so to speak, a part of it, and thus to become the property of the owner of the place, and to be incapable of removal when there is any question as to the legal right of the person who places them on the ground or building and the person to whom the ground or building belongs. This, indeed, is one of the ways in which the term has been legally employed, being "applied to things expressly to denote that they *cannot* legally be removed, as where they have been annexed to a house, and the party who has affixed them is not at liberty afterwards to sever and take them away." On the other hand, the word has received this very opposite definition, "personal chattels, which have been annexed to land so as to become part of it, but which *may* be afterwards severed and removed by the person who has annexed them, or his personal representative, against the will of the owner of the freehold." So that, in truth, it is impossible to use this very short and convenient word in either sense without the risk of confusion, and it is therefore safer to consider the word as being applicable to a class of things placed on the ground or on buildings, but not to apply it in connexion with removability or irremovability. It is unfortunate that there is this necessity, but if persons use the word in one sense or the other, it is quite certain that from time to time they will get into difficulties by so doing. It is probable that, to a certain extent, the trouble has arisen by the force of circumstances. By the common law of England everything affixed to the freehold became an essential part of it, and thus necessarily became the property of the freeholder. Consequently fixtures in early times would be regarded in the first sense of the term. But subsequently, when the rule became gradually relaxed, in process of time the class of removable articles greatly increased; and they were termed fixtures to distinguish them from the articles then properly so called. It will, however, probably be of greater practical use if, having pointed out the essential difficulty connected with this subject, we cull from the pages of the work on "Fixtures" to which we have alluded some examples of articles which are removable, and point out some of the signs by which their removability is ascertained.

The first instances which may be taken are statues, vases, &c., connected with a house or with its grounds; and the test whether these are or are not removable seems to depend upon the criterion whether they are strictly a part of the architectural design of the place, and also whether they are in the nature

* Amos and Ferrard on the Law of Fixtures. Third Edition. By C. A. Ferrard and W. H. Roberts, Barristers-at-Law. London: Stevens & Sons. 1884.

of permanent fixtures. In a case before the late Lord Romilly it was decided that some carved kneeling figures in the staircase in the great hall of an exceptionally large and handsome country-house, and some lions at the head of a flight of steps into the garden, as well as some stone garden-seats, could not be removed. "I think," said the judge, "it does not depend on whether any cement is used for fixing these articles, or whether they rest by their own weight, but upon this, — whether they are strictly and properly part of the architectural design for the hall and staircase itself, and put in there as such, as distinguished from mere ornaments to be afterwards added." This is, no doubt, as admitted by the judge himself, a fine distinction, but still it does act as a test, and is probably as useful a one as can be found. We have in the above definition added to it by coupling with it the question of permanence, and it is probable that this would sometimes be necessary, for it is quite possible to imagine things part of the architectural design of the house, but which had so little of the character of permanence about them that it would be difficult to consider them to be immovable. As a sequel to this case we may mention a Scotch one in which it was decided that stone lions in the ground of a house, and bedded in stucco, and fireclay vases, placed on the tops of a stone parapet wall and on stone pedestals, and attached by cement, did not lose their character as removable articles, since they formed no part of the design of the house, and the cement was only required for the purpose of preventing them from being blown or knocked over.

There are various classes of fixtures, such as those connected with agriculture and trade, which are of considerable importance, but which space will not now allow us to notice. Such as are connected with ordinary dwelling-houses may be considered of wider importance, and on them we may say something. It must be confessed that the distinction between things removable by a tenant and those which become the property of the landlord is a difficult one. Removable fixtures are thus classed in Amos and Ferrard on "The Law of Fixtures." Hangings, tapestry, and pier-glasses nailed or screwed to the walls or panels of a house, ornamental chimney-pieces, whether of marble or other material, wooden cornices, marble slabs, window-blinds, and the like, and even, it has been said, wainscot, fixed to the wall by screws. In addition to those which are here enumerated, there are other things, such as cupboards and shelves, grates, bells, &c. But the difficulty in regard to these primarily, as the law now stands, removable things, is increased by the fact that this power of removal by the tenant is not an absolute one, because, to use the words of Chief Justice Dallas, "there may be that sort of fixing or annexation which, though the building or thing may have been solely for ornament, will yet make the removal of it waste." But considering that chimney-pieces have been more than once included in the class of removable fixtures, it is difficult to see where the exact line is to be drawn, because there are probably few, if any, fixtures in a house which can be said to be more permanent or more integral parts of a house than the chimney-pieces; of course if chimney-pieces were to be removable, then grates could hardly be excluded. And arguing on from article to article, it would seem very difficult to say that a ventilating pipe, for example, should not be just as much removed as a grate. Again, if a grate can be removed, why should not a conservatory on brick foundations be equally taken away by a tenant? But, on the contrary, it has twice been decided that conservatories on brick foundations become, at any rate, the property of the landlord. The arbitrary character of the distinction, or want of distinction, between different articles was clearly shown in the judgment of Chief Justice Dallas in regard to the first conservatory case; for, after alluding to the chimney-pieces and other matters, he said:—"Of all these it is to be observed that they are exceptions only, and therefore, though to be fairly considered, not to be extended." But the reasoning which would allow the tenant to remove one would allow him to remove the other, so that it may fairly be said that the exceptions and the rules now are based on no particular principle. Under the old law of England all these fixtures would, on being placed in a house, have ceased to be the property of the tenant. It has been simply by what may be called judicial legislation, based now on the idea of a fixture being ornamental, and now that it was only lightly annexed to the house, that a large class of exceptions has sprung up, which, comprising most things that a tenant would desire to remove, has now been practically fixed, and will, apparently, not be extended. But, whilst habit has got the world to know, more or less, certain of the common fixtures which may be removed from time to time when disputes arise, the great difficulty of deciding what are and what are not to be removed by a tenant is shown. The three criteria,—namely, the method of annexation, the nature and construction of the fixture, and the effect of the removal on the property of the reversioner,—may help us to decide on the points as they arise. But, with exceptions to the old common-law rule so numerous, based on grounds so arbitrary, it is impossible that, except by direct legislation, the question of what are removable fixtures can ever be one either easy or satisfactory to decide.

THE CARPENTERS AND FLOOR-MAKERS OF PARIS.

THE union of the master carpenters of Paris has given evidence to the Commission of the Forty-four. M. Bertrand, the president of the Syndical Chamber of the employers of this trade, was the spokesman. He stated that there were in all 282 employers in Paris, and that, out of this number, 121 had joined the Masters' Union. The condition of the working men had, he maintained, greatly improved. They now required luxuries unknown some years ago, and still ignored in foreign countries. This naturally affected the question of wages, and M. Bertrand did not hesitate to say that the present depression was, in fact, due to the increase of salaries. In Germany the carpenter only makes 2s. per day, while the Parisian receives at least 6s. 5d. The employers were therefore compelled to send abroad for workmen. The number of men required in the trade had, however, been greatly exaggerated. There were formerly 5,000 journeymen carpenters in Paris, but these had now been reduced to about 3,500, and each year during the winter 700 to 800 return to the provinces. The men work ten hours during the summer, and eight in the winter, and, as a rule, receive 8d. per hour. The town of Paris pays, however, 9d., and against this liberality M. Bertrand protested. The employers meant to resist by every means the example set by the municipality, and he attempted to show that it was in the interest of the workmen themselves to receive 1d. less per hour. He further reckoned that only seven-tenths of the workmen in this branch were employed; nor would he hold forth any hope of a revival in the trade. It was, on the contrary, his opinion that, fifteen months hence, the crisis would be far more acute.

The scheme for building cheap artisans' dwellings was treated by M. Bertrand as a Utopian idea; and he urged that on the outskirts of Paris there was a plentiful supply of cheap lodgings available for workmen. The best way of attenuating the crisis would be to improve the means of communication so that the poorer sections of the population might dwell in the more distant and cheaper districts. Finally, we are informed that the employers have created an insurance fund in favour of the workmen. This is done by the employers independently, and without the assistance of the workmen.

To the above statements, the workmen object that the proportion of men without employ is greater than that mentioned by M. Bertrand. They also urge that, though the workman does receive 8 fr., still he is rarely able to work more than 245 days in the year, and this therefore reduces his income to 4s. 3½d. per day. Considering the high price of provisions and the exorbitant charge for rent, this is not sufficient for a man and his family to live on in Paris; and they therefore insist that the tariff of the town should be adopted throughout the trade, and the wages raised to 9d. per hour. The delegates of the carpenters' society, entitled "Le Devoir," 161, Rue d'Allemagne, protested that the workmen themselves had created a benefit fund and made every effort to assist each other in times of depression, accident, and sickness. The introduction of machinery, the disturbing effect of the expeditions to Tunis and Tonquin, were mentioned by the men as among the causes of the present depression. To remedy the evil they suggested that contracts for work should be made with the workmen's societies without the intervention of a middle-man. The workmen were well enough organised to carry out any branch of carpentering, and the State could well do without the employers, who kept for themselves the larger share of the profits and rendered no equivalent service.

The delegates from the union of the workmen who inlay the floors were also examined by the Parliamentary Commission. This branch of the building trade is, comparatively speaking, of greater importance in Paris than in London. The polished floors of French houses naturally require more care than the plain boards of our English homes. The fact that in France, as a rule, carpets are only used in winter, explains this difference. It is estimated that there are about 1,200 parquetry workers in Paris, of whom only half are now employed. Their wages amount to 7*l.* 4s. per month, and they attribute the present crisis to the competition between builders, to the fact that too many high-class houses have been constructed. The result is not only that these houses in many instances have no tenants, but the financial position of the builders is often gravely compromised, for many among them are part proprietors of the property they help to create. The delegates complained very bitterly of the fact that the parquetry work was often conceded to the contractor who undertook the joinery. This individual has consequently to engage a sub-contractor for the inlaying of the floors, and this meant a subdivision of the profits, the reduction of wages, and often the employment of unskilled, incompetent workmen. The delegates then complained that they had frequently sought to establish friendly relations with the masters' association, but had not yet been successful. On their side, the workmen's union only consisted of 350 members, and half the members failed to pay their subscriptions regularly. Thereupon, the president of the Parliamentary Commission delivered a little speech to the delegates, urging them to cultivate all means of improving their technical education. This, he argued, was the best means of raising French industry, and of resisting foreign competition.

MR. POYNTER, R.A., ON THE CONNEXION BETWEEN ASIATIC AND GREEK SCULPTURE.*

ANOTHER link connecting Greek with Assyrian art is the constant introduction of the lion into Greek architectural decoration. The lion could hardly have been indigenous to Greek soil, and must therefore have been introduced from abroad; and while the lion of Greek sculpture has no affinity with the Egyptian lion, the resemblance to Assyrian treatment is very marked, even to my mind in the lions' heads from the cornice of the Parthenon, but the Greek lion is never so true to nature and to the character of the beast as the Assyrian. To the copious evidence from the vases I cannot do more than allude, but must refer you to the early vases from Rhodes and elsewhere in the British Museum, decorated with animals in the Assyrian style, and with the Assyrian guilloche ornament.

Any such direct influence from Egypt it is difficult to trace. In those very early and prehistoric remains at Mycenæ and Orchomenos, and other places in Greece proper, a spiral ornament has been found in abundance, which resembles a similar decorative form in a tomb at Thebes, but the connexion seems too remote to have much value as evidence, and the form might equally well have come from Asia; for the imposing decoration of the Lion Gate at Mycenæ, which is probably well known to you as the earliest known specimen of Greek sculpture, is distinctly Asiatic; similar arrangements of two lions facing each other in the position called "rampant" in heraldry, on each side of a central column, having been found in Phrygia, over the doors of more than one tomb, the disposition being originally Assyrian. The columns of the Treasury of Atreus at the same place have a large spreading base, something like the Egyptian, but there the resemblance ends; the

* Continuation of a lecture delivered at the Royal Academy on the 10th inst. (see p. 401, *ante*). For Mr. Poynter's previous lecture (on Egyptian Sculpture) see *Builder*, pp. 330, 366, *ante*.

general form and decoration are like nothing else that we know. More connected with historical times, but still rather of a traditional than of an historical nature, is the account of the brothers Theodorus and Telecles of Samos, the reputed inventors of casting in bronze, who are said to have lived some time in Egypt, probably in the seventh century B.C., and to have made an Apollo in the Egyptian style. The story runs that they learned the Egyptian art of sculpture with such exactitude that Theodorus, having made one half in Ephesus, and Telecles the other half in Samos, when the two halves were brought together they agreed as perfectly as though the whole had been done by one artist. The figure was of wood, and must, of course, have been of a very uncouth character. Mr. Murray connects with it a very primitive statue of Apollo, which is at Munich, called the Apollo of Tenea, which he supposes may be a copy of this wooden statue. Two repetitions, one of which is called the Strangford Apollo, are in the British Museum; and there is another, called the Apollo of Thera, at Athens. There is no doubt that they are all repetitions of some celebrated though highly primitive original. There is unquestionably a certain Egyptian character in these figures. The hands straight down by the sides, the position of the feet, the wig-like treatment of the hair, and the small waist, with the peculiar treatment of the thorax, in the Munich Apollo, are all such as we have found in Egyptian figures. But we find also in this early copy of an ancient figure an independent effort towards the realisation of natural forms; the knees are studied from nature, and show an original and individual, if not very successful, attempt on the part of the artist, to give the fold of skin under the patella; and the details throughout the figure show the same spirit. The face has the marked Asiatic type, with eyes sloping upwards towards the temples, which we find in all the earliest Greek art, and which is also conspicuous in the Cyprus sculptures which I have described. The Apollo of the British Museum is later, and shows some differences of treatment, into which I need not enter. There are casts of these statues in the Museum of Casts at South Kensington. Some small works in bronze, supposed to be of Peloponnesian art, also present some peculiarities which may be said to be Egyptian. And here, I think, is all the evidence of Egyptian influence which can be shown. How it was that the Greeks came to lay so much stress on this origin of their arts, and of so many of their manners and customs, and indeed of their religious rites, and to ignore the much more important and lasting influence of the Eastern nations of Asia, does not seem difficult to understand. The Persians and the other Oriental conquering despotisms were their natural enemies; Greek settlements in Asia Minor and the islands were constantly being devastated by Assyrian and Persian conquerors. Direct intercourse with countries with whom they were perpetually at war was not possible, and it was mostly by the intermediary traffic of the Phœnicians that the arts of these countries were gradually and imperceptibly influencing their own. The Egyptians, on the other hand, were allied with them in resisting the advances of these powerful despots; the kings of the twenty-sixth dynasty only succeeded in delivering their country from Assyrian occupation by the assistance of Greek mercenaries; and Greece, as we know, was equally interested with Egypt in repelling the great Persian invasions. Their intercourse with Egypt, which after the Persian war, was frequent, would naturally lead them to think more of the assistance in the development of their art which they could trace to that country, than of the gradual advance which came in unperceived from other quarters. It is interesting to trace the duration of these influences on the workmanship of Greek art. I have shown you the peculiar treatment of the hair in the sculptures from Cyprus. Examination of works of Greek sculpture in the Museum of Casts at South Kensington, where a chronological arrangement gives the opportunity for comparison, shows that this particular method of arranging the hair in regular locks terminating with a curl, or in distinct spirals, or in close and conventionally-formed curls treated in the same formal manner, was continued even to the time of Pheidias; for we find it adopted by Alcamenes (whose work is stiffer and retains more of the archaic treatment than that of some of his contemporaries) in the pediment sculptures of the Temple of Zeus at Olympia. The locks are less formal in arrangement, it is true, but the defined curl at the end is there as distinctly as in the earlier works. In the stele of the warrior Aristion, by Aristocles, at Athens, we have a figure of the end of the sixth or very early in the fifth century. Here the general character is so like that of the soldiers in the Assyrian bas-reliefs as to be quite startling. The exaggerated muscularity of the limbs, the eye placed in full view in a face which is in profile, the arrangement of the hair, and even the attitude, are almost identical. Much of this must be accidental, for we can imagine no direct influence which would be possible at that date; but some of it, no doubt, is traditional, handed down from earlier methods of treatment when Oriental and Asiatic sources were in more direct contact with Greek life. We find a like arrangement of the curls in those of the warriors of the Æginetan sculptures, who are without helmets; and there are other instances of similar treatment with which I need not trouble you, but which, when the Museum of Casts is open to the public, you will be able to trace for yourselves. It may be that through this method of rendering the hair is to be traced the Ionic influence from western Asia Minor on the art of Greece proper.

We have still another country in Asia in which sculptured monuments have been found, closely related to Greek art, whose remains are in the British Museum. I refer to the Lycian tombs and their highly interesting reliefs. This subject is one which Mr. Newton has made peculiarly his own, and I shall do no more than allude to it. The place of Lycian art seems to be not definitely settled. The early sculptures, which are those I am now dealing with, are considered to show Persian influence, and Mr. Murray gives in his History an illustration of some horses from a funeral procession in the British Museum, the trappings of which are identical with those found on the reliefs at Persepolis. If these sculptures were executed after the conquest of Xanthos by Harpagus, the Persian general, in B.C. 564, which, from their style, may be said to be certain, this resemblance is easily accounted for. Mr. Murray supposes their date to be from 540 to 500 B.C. But the general character of these, and of the reliefs on the well-known Harpy tomb, are in their workmanship what we should call Greek, although the mythical beings represented are of Lycian origin. The costumes, too, are such as we find in the Ionian Greek art,—the long Ionian tunic, of fine material, in multitudinous folds, being conspicuous. Lycia was in no sense a Greek colony, and it had a distinct and separate language of its own, but it seems difficult to doubt the sculptures being of Greek workmanship. Otherwise we must suppose an independent school existing there, from which the Greeks must have learned much more directly than is easily imagined. I do not think that any such supposition can be entertained.

Closely resembling these marbles in style and in costume are those bas-reliefs found in Thasos, the most northerly of the islands in the Ægean Sea. These are far superior in execution to the Lycian reliefs, and somewhat more advanced in treatment. A figure of Apollo with the lyre, instead of being in exact profile, like all the other figures, and like those of the Lycian reliefs, is turned round, so as to give a three-quarter view of the body, and the face was probably in full front view. The attitude, though stiff, is approaching the freedom of the Parthenon frieze, and the drapery is natural in treatment throughout, though still retaining some archaic stiffness in the execution. These reliefs, which are in the Louvre, are considered by a French critic to be of the second quarter of the fifth century B.C., which would make them from fifty to sixty years later than the Lycian monuments, which seems hardly possible, and I can hardly consent to give to these archaic works a place so advanced in the history of art. However this may be, and it is not for us a matter of great importance, we find in these reliefs more independence of style than in any works that I have hitherto referred to. The head-dresses and hair are no longer rendered on stereotyped models, but are taken direct from nature, the head-dresses being of the beautiful kind which we associate with purely Greek personages, and, no doubt, exact copies of what was worn. In the Lycian reliefs the diadems are carved in stone; in those from Thasos they were in metal, probably bronze-gilt. The holes for fixing them are there, but the metal has, of course, disappeared. The beautiful Ionic dresses are rendered also with great fidelity to actual costume, and so varied are they that one could almost suppose that the artist had the intention of showing us the different materials and methods of arranging the tunics and upper garments.

It is with reference to the extraneous influences brought to bear on Greek art that I have introduced the consideration of these sculptures, which otherwise would not find a place in treating of the early times I have hitherto been dealing with. In resuming the consideration of these we are struck with the difference of character between the Doric and the Ionic styles, which may be said to have the same relation to each other as the severe and sleeveless Dorian tunic had to the long and graceful garment of the Ionians, and which is still further typified by the contrast between the two orders of architecture which bear their names; the one sturdy and massive in its proportions and severe in detail, the other slender and more profuse in its ornamentation. Accordingly we find the metopes from the temple at Selinus, a Doric colony in Sicily, differing widely from the statues at Branchidæ, though both are of about the same date,—the end of the seventh century B.C. But earlier than these, it is supposed, are the reliefs from Assos in the Troad, perhaps in some respects the most primitive Greek sculptures which exist. In these, which represent Greek myths in a comically grotesque form, Oriental influence is very obvious in the animals, in the type of face, and in the thin, flat character of the relief, and there is no more composition than in the Assyrian sculptures. They decorate the architrave of the Doric temple,—a solitary instance of sculpture found in this relation, and supposed to be suggested by the enriched metal casings with which it was the custom to cover wooden beams, and of which you may see most interesting and well-preserved Assyrian examples in the British Museum, in the long bronze friezes which overlaid the gates of Shalmaneser II. But also it must be said that the movements are more lively than in many works which are considered to be of later date. The feet, which in early art are always placed flat on the ground in walking, here have the heels raised. Moreover, a figure of Hercules, perfectly nude, shows as complete emancipation from the Oriental idea as the Selinus metopes. At Selinus the style of art is very different; the relief is very bold and high, and the figures stunted, with thick limbs and the large, prominent thighs, characteristic of the earliest Greek art, which we find also in the statues of Apollo, to which I have referred, but in them accompanied by great slenderness of the legs and ankles. The general appearance of the metopes from Selinus, which are probably familiar to you from casts which are in the British Museum, is grotesque in the extreme, and it is hard not to believe that the artist intended them to be humorous; but whereas at Assos there is not any attempt at composition, the figures being of all sizes,—some very large in proportion to the space, and others minute,—in these metopes we see perhaps the earliest attempt at that ordination and perfect arrangement for filling the space without forcing the disposition of the forms, which is one of the most distinguished characteristics of Greek art, at its best. In the statues from the Ionic settlement at Branchidæ there is hardly more, perhaps less, knowledge of the human form displayed than in the Sicilian metopes; but although the execution is clumsy, there is no ruggedness; on the contrary, the tendency is everywhere towards grace and softness, and rounded forms. This broad distinction between severity and softness, between sturdiness and grace, may be traced in the Doric and Ionic styles down to a late period. Those six splendid bronze draped figures in the museum at Naples, which, with other beautiful bronze originals, seem to be so unaccountably neglected in those histories of the art which are founded on German speculations, are believed by M. Rayet to be of the Peloponnesian school of the fourth century, and their simple attitudes and the severe lines of their Doric dresses are unquestionably in marked contrast to the Attic figures of the same period. The Giustiniani Vesta is a marble figure of precisely the same character; so like that it might be a marble copy of a similar figure by the same sculptor, but it is, I believe, considered to be earlier. At all events, this figure has excited much specu-

lation among archæologists, whereas the bronze figures pass unnoticed.

It will be useless to carry further the consideration of a number of statues and reliefs which, if they are unknown to you, can convey no impression to your minds without illustrations. It will be still more useless to give you strings of names of sculptors with whom no discovered works are connected; and there are so many histories of sculpture now published that such an enumeration would be superfluous; among them I may mention Mr. Murray's "History," in 2 vols., to which I have often made reference in this lecture; Mrs. Mitchell's "History of Ancient Sculpture"; and Mr. Walter Perry's "History." All these have been published within the last three years, so that you have plenty of material for study carried up to the latest discoveries.

I have here endeavoured to sum up in a short account the evidences of whatever influences from outside assisted in determining the form which Greek art took to itself, and I believe it to be in general agreement with the opinions which are now held. It is clear that there is ample room for speculation in the absence of historical evidence on the one hand, and in the infinite variety and amount of circumstantial evidence on the other. If there is one thing which forces itself upon us more than another in looking at the earliest form which Greek art displays, it is that the feeling for beauty is conspicuous by its absence. It is clear that from Assyrian art they could have gained no feeling of this kind, and of that solemn and reposeful ideal of form with which, as we have seen, the Egyptians invested their monumental sculpture, we discover no trace. What we notice about the beginnings of Greek art is its independence; even while it borrows its ornamental forms and its style of workmanship from Oriental sources, it is applying them to its own ideas and giving them its own character. This independence is the secret of Greek superiority. In Egypt and in Assyria, as we have seen, all monumental art is more or less subservient to the one intention of recording the acts of the reigning monarch. In Assyria this is the unique idea; the gods themselves hold little place in their representations, and then, apparently, more as protectors of the king than as ideal beings influencing the fortunes of mankind in general; we see nothing but one central figure, an oppressive and all-powerful monarch, and a nation of slaves. Domestic life there is none; there are no tombs to record even the names of private persons, and it seems to be a mystery how they disposed of their dead. Under this monstrous oppression the individual is equally effaced in life and in death. In Egypt also we have a despotism, but of a more mild and beneficent kind, leaving the people free to cultivate the arts of peace and to enjoy domestic happiness; the family and reverence for the dead held a high place in their life, and were a fruitful source of production in painting and sculpture. The gods of Egypt, too, take an important position in their art. The Egyptians were a religious race; but the religion is priest-ridden, a religion of ritual and formulas. In Greece there was neither priest nor king to interfere with individual rights, nor to require flattery from literature or art; but there was an intensely religious sentiment, and awe of the gods held the first place in their lives. It is impossible to read Herodotus without being struck by this devotional feeling, which induces him to speak of the gods as it were with bated breath, to reverence the rites even of alien religions. Their historical myths are also religious myths; and, accordingly, from the very earliest times we find the gods and the myths taking the leading place in their art; and it is from the ideal of perfection with which their poetical imagination invested, each in his kind, the persons of their gods and heroes, that the inspiration of beauty is derived. But this comes only gradually. There is a period of more than a century and a half from the sculptures of Selinus, which, as the colony was founded in B.C. 615, may be said to be of about the year 600, to the building of the Parthenon about the year 445; and during all this time the seeking for beauty in nature and its expression in art does not appear to have been the aim of the Greek sculptor, though all his instincts tended towards it.

The approaches towards beauty in Greek art are of all its aspects perhaps the most interesting to trace, and could easily be made the subject of a lecture. It is obvious that there is no time to deal with it. Briefly it may be said that the beauty is inherent in the archaism; the first effort of the Greeks was to render generally the impression of the human figure without going into details; the generic forms only are given, and those in a stiff and formal manner. By degrees, as the art improved, the execution became better, and forms became more rounded and more symmetrical, while still retaining their typical character. The aim of the artist was not, as I have said, so much towards a seeking for beauty in nature, as towards improvement in the execution of his work; it is during his progress in this respect that he begins to look for variety from nature arising from differences of character, and from the play of form in movement. It is the culmination of these two qualities, perfection of execution, and a perfect knowledge of nature, added, of course, to the high ideal conception of his subject, that makes the complete art of Pheidias.

This lecture has been but a sketch, or a collection of sketches, from a subject so vast that it has taken many a man's life-time to consider it in all its bearings. I am fully sensible of my own incompetence to deal with such a subject, and, as I told you at the beginning, it is only with the crumbs gathered from the labours of other men that I am able to approach you at all. I have referred you, as far as possible, to works which are accessible, and my object has been to make clear to you points which have interested and puzzled myself. I can only hope that the interest which I have taken in attempting to make them intelligible to myself may have in some way been imparted to what I have said.

THE ENFRANCHISEMENT OF LEASEHOLDS.

THE debate last week on Mr. Broadhurst's Bill for the Enfranchisement of Leaseholds, to which we briefly alluded at the time, must be regarded as one of a rather noteworthy character, especially coupled with the several Parliamentary notices which have since been given on this subject. That a Bill which must have offended the opinions of many persons, both Whigs and Tories, should, the first time it was debated in the House of Commons, have 104 supporters, shows conclusively that the principle, in a more or less modified form, will sooner or later be accepted by the Legislature. The chief secret of the success of Mr. Broadhurst must, we think, be sought for in the fact that his measure attempted to put an end to the system of leases for lives, and it was largely in order to crush this system that many voted for the Bill who were by no means prepared to agree to all its provisions. The inconvenience and the uncertainty of the system of leases for lives was conclusively shown during the debate. What, for instance, can be more absurd than that a man's tenure of his house should depend on the length of the lives of the Prince of Wales and the Duke of Connaught, and that when the latter went to Egypt the premium for renewing leases held on his life went up twenty-five per cent.? But in order to put an end to this system, the whole of Mr. Broadhurst's Bill need not become law. It might be possible to pass a short Act making it illegal to grant leases for lives after a certain period, and to change existing leases for lives into leases for fixed periods on certain terms. Such a measure would probably become law in a short time, but mixed with Mr. Broadhurst's other proposals, it is unlikely to succeed in passing through the Legislature. But nothing in the debate has altered the opinion which we have before expressed that it is possible to limit the operation of the Act to leases for longer periods than twenty-one years. As we have before said, if the man with a lease to run for twenty-five years is allowed to buy out his landlord, is it in human nature that the man with fifteen years of his lease to run will not also wish to have the same right to exercise if he should desire it? Another noticeable incident during the debate was the assertion by many members that freedom of contract did not exist in large towns between landlord and tenant. Of course, on the other hand, this was denied; but the idea to be gained from the discussion certainly was that it is, nevertheless, the prevailing belief that tenants whose business obliges them to live in large towns must in practice submit to the landlord's terms; that they cannot, in fact, deal with houses as they can with butchers' meat or tailors' clothes, and take them or leave them as they see fit,—that, in fact, freedom of contract does not exist. This is a noticeable point, because, if this fact is once admitted it obviously is ground for considerable legislative interference between urban landlords and tenants. It is also, indeed, a stronger ground for granting compensation to tenants for improvements than it is for giving the tenant the right to buy out his own landlord. The question of compensation for improvements did, indeed, crop up a little in the course of the debate, as when Sir Henry Drummond Wolff pointed out that tenants could not now be expected to spend money on permanent improvements. We take it that the recent debate will result in the speedy extinction of leases for lives, that it will create a public opinion on the relationship of landlord and tenant, especially in towns, which will probably end in ultimately improving the position of the tenant by placing on the landlord greater burdens and giving the tenant the right to be compensated for improvements. Further, the effect of the more general discussion of this matter, — especially in connexion with the gradual working of Lord Cairns's Act,—will be to cause large properties in towns to be gradually broken up. The Duke of Devonshire at Eastbourne is, for example, giving tenants the opportunities of purchasing the freehold of their estates. Large estates in towns give no social prominence, and, year by year, less social influence. Thus, under the effect of public opinion, public burdens, and hord Cairns's Act, the object of Mr. Broadhurst's Bill will be gradually attained.

BUILDERS' CLERKS' BENEVOLENT INSTITUTION.

THE ANNUAL DINNER.

THE sixth annual dinner in connexion with this institution took place on Tuesday evening last in the Venetian Saloon of the Holborn Restaurant, when nearly two hundred of the subscribers and their friends attended to support the president, Mr. Joseph Randall, of the firm of Kirk & Randall.

The Chairman, in proposing "Prosperity to the Institution," made an able appeal on behalf of the charity, observing that it was founded some seventeen years ago for the purpose of helping decayed builders' clerks who have arrived at the age of fifty-five, and their widows,—the sum of 25*l.* per annum being given to the male pensioners and 20*l.* per annum to the widows. Since the institution was founded nineteen pensioners had been elected, of whom twelve were now on the books. But useful as had been the work accomplished, much more might be done by the co-operation of the large body of builders' clerks. Comparatively few clerks supported the institution as annual subscribers, or its income, instead of being reckoned by hundreds, would be counted in thousands. It could not be pretended that the granting of twelve small pensions and the maintenance of two orphans was an adequate expression of the needs of builders' clerks in these respects, but the institution could do no more unless it were better supported by the clerks themselves.

Other toasts followed, and during the evening subscriptions and donations to the amount of 405*l.* 8s. 6d. were announced,—a larger sum than has been obtained on any previous occasion. Among the gentlemen who supported the chairman and took part in the proceedings were Mr. Edward Conder, Mr. Thomas Stirling, Mr. Thomas F. Rider, Mr. Howard Colls, Mr. Stanley George Bird, Mr. Edwin Brooks (treasurer), Mr. Woodward, Mr. Stonor, Mr. Waller, Mr. Kentish, Mr. Kirk, Mr. Roe, Mr. Maton, Mr. Ross, Mr. Ward, and Mr. H. J. Wheatley, secretary.

Mr. Gullick's Mirror Painting.—Mr. Gullick writes to say that we have misrepresented his work in a "Note" in last week's *Builder* (page 398), in describing his large piece of mirror-painting as a piece to go behind a *buffet*, and therefore our strictures on painting a realistic representation of fruit in that position are uncalled for. He has also written at some length his views as to painting and decoration, claiming that his mirror-paintings are to be judged as *pictures*, not as decoration. We should have been very willing to print his letter, though not agreeing with it, but we have not space. As to the two points complained of, Mr. Gullick called it, in his own circular, "*decoration* for a dining-room," and most people, regarding it in that light, would naturally conclude it was to go behind the *buffet*; nor do we see where else it could go very well.

AMERICAN CONSTRUCTIVE DETAILS.
II.

THE sheet of details we give this week shows some of the roofing details of the Custom House and Post-office, St. Louis, the section of the iron cupola of which we gave last week. It formed one of the illustrations to the paper read by Mr. Gale at the Civil and Mechanical Engineers' Society, and partially reported in our last (page 421, *ante*). The diagrams give sections showing the main points of construction in a method of roofing which aims at being fire-proof, which, at all events, excludes all combustible materials, dealing only with iron, slate, copper (for flashings), and concrete or cement. The building from which this and last week's illustrations were taken was erected under the supervision of Mr. J. G. Hill, supervising architect in the Treasury Department, U.S., and the illustrations are reproduced here from photographs of the original working drawings, communicated by him to Mr. Gale.

THE NEW SCOTTISH NATIONAL CHURCH FOR LONDON.

THE fifth afternoon visit of the members of the Architectural Association took place last Saturday, the 22nd inst., to the New Scottish National Church, dedicated to St. Andrew, and situated in Pont-street, Belgrave-square. We give a view and plan of the building this week.

The visitors were met by Mr. J. Macviear Anderson, the architect of the building, and on the Communion-table were displayed a large number of working and detail drawings. Close by was exposed the foundation-stone, inscribed:—"To the glory of God. This stone was laid by the Right Hon. the Earl of Aberdeen, Lord High Commissioner to the General Assembly of the Church of Scotland, May 2nd, 1883." An account of this ceremony, together with a general description of the church, was given in this journal at the time (see *Builder*, May 5th, 1883). Mr. Anderson, who, as many of our readers are aware, is the hon. secretary of the Royal Institute of British Architects, in describing the church, commenced by explaining that the differences between the service of the Church of Scotland and that of the Church of England required an entire difference of arrangement in the treatment of the chancel and its surroundings, no east window and no altar being required, but simply a plain communion-table, as seen.

The baldness and severity of church architecture in Scotland is proverbial, or, at all events, was so till a few years since. The revival of ecclesiastical architecture in England has, however, exercised an unodubted influence north of the Tweed, where formerly it was the rare exception to find a church designed with any regard to architectural propriety, and where it is now happily the exception to find any modern church that is devoid of it. It is true that the Presbyterian form of worship is characterised by great simplicity,—a simplicity which all true well-wishers of the Church of Scotland desire to see maintained,—but many churches erected within the last few years demonstrate that there is nothing in the simplicity of the service which is at all antagonistic to its observance in an edifice partaking of a liberal amount of architectural elegance and ornamentation. The present building might be taken as being thoroughly representative, both as regards the manner in which the service of the Church of Scotland is now conducted, and as regards the architectural adaptation of the building to the requirements of the service.

In lieu of the altar at the east end, the space is occupied by a high reredos containing the Ten Commandments, &c., the illumination of which has been executed by Messrs. Heaton, Butler, & Bayne. Over the reredos is a large marble mosaic decoration by Messrs. Burke & Co. The pulpit, a fine one, was carved by Mr. Ruddock, and cost about 130*l*. The brass pulpit-rail, the gasfittings, and external wrought-iron railing are all executed by Messrs. Brawn & Co., and the organ by Messrs. Forster & Andrews. The contract for the building has been undertaken by Mr. E. Lawrance, and is fast approaching completion. Mr. Anderson said the church was planned to accommodate 900 persons, but sittings could be found in the nave and gallery for 1,000. The seats were all executed in pitch-pine, varnished. The cost of the building, exclusive of the organ and furniture, was about 12,000*l*., that of the site over 8,000*l*. It was contemplated, if funds were forthcoming, to also erect a clergyman's residence on the site. There is a large hall in the basement for congregational purposes. Here is also the heating apparatus (under front entrance) by Haden, of Trowbridge. This portion of basement is lighted by Hyatt's lights. The exterior walls of the church are faced with red bricks and Doulting stone dressings. The internal stone, where used, is Bath (Corsham Down) stone, and the shafts of the nave polished Peterhead granite, and the smaller shafts to windows polished Aberdeen granite. The whole of the windows are glazed with tinted glass by Pickering, of London. The ventilators in the clearstory windows are all easily and simultaneously opened by Elsley's patent apparatus, and shut by the same gear. The roof is covered on the underside with stained deal. The mosaic paving to nave, chancel, &c., is also by Messrs. Burke & Co. The external doors all open outwards for safety in case of panic or alarm of fire.

We understand that the church (which is intended for the congregation of the church in Crown-court, Covent Garden, for so long the scene of the ministry of the late Dr. Cumming) is shortly to be opened for Divine service.

OLD CHIMNEYPIECE AT IPSWICH.

THE chimneypiece from which this measured drawing has been taken is in its original position in an old house in the parish of St. Clement, Ipswich, and is one of the many examples of old oak work in which Ipswich still abounds. The original owner of the house was a Mr. Thomas Eldred, and the room in which is this chimneypiece is entirely panelled.

Thomas Eldred was a companion of Cavendish in one of his voyages round the world, and he it was, in all probability, who fitted up this room in the state in which it still remains to this day.

The circular-headed panels in the upper part of the chimneypiece have old paintings in them. In the centre panel is a painting of a globe with an inscription underneath giving the dates when Eldred sailed, &c., but it is difficult to decipher it. In the panel on the left is a painting of a ship in full sail, and in the panel on the right is the portrait of a man who is looking through a glass. The inlay work shown in the drawing is distinctly traceable through the paint in all the panels.

Tradition says that the panelling round the room was taken out of the cabin of the vessel in which Eldred circumnavigated the world; of course it is impossible to prove this, but certain peculiarities in the panelling point to the fact that it is probable that it came out of a ship's cabin, which in those days was so often beautifully fitted up.

THE CATHEDRAL AND NEUMÜNSTER-KIRCHE, WURZBURG.

THE SCENE OF LONGFELLOW'S POEM "WALTER VON DER VOGELWEID."

THE cathedral and Neumünsterkirche, or church of the New Minster at Wurzburg, stand side by side. They are rather peculiar examples of German Romanesque work externally, but internally scarcely a vestige of their original style is discernible, as walls, pillars, vaulting, and arches are coated with stucco work executed during the eighteenth century. It must be acknowledged that there is much artistic skill and elegance in this modernisation, as far at least as the cathedral is concerned, and that the angels or Cupids bearing the corbels of the vaulting, the wreaths, cornucopiæ, shellwork, &c., are delicately and sharply modelled. Of course every one who admires ancient ecclesiastical architecture must regret the generosity of Von Waltersdorf, a priest of the cathedral, who left his money, in 1700, for the restoration of the church. Unfortunately, from an art point of view, he lived three or four centuries too late. We must, however, strongly deprecate the suggested internal restoration, which would destroy Von Waltersdorf's work, because, although of a low and poor style, it is a good example of its class, and is excellent in point of workmanship.

The cathedral was commenced in 862, and possibly the crypt below the choir may be of this date. The rest of the church, however, was rebuilt between 1189 and 1230. The two elegant towers flanking the choir are of the latter date. One of these towers is built in alternate courses of red and white stone, but the other is entirely of white stone; both of the western towers are striped.

The small dome-capped chapel adjoining the north transept was erected by Bishop Schornborn, who died in 1721, and is buried here. The Emperor Frederick Barbarossa was married in this church.

A court, which was until some half a century back a cemetery, separates the cathedral from the church of the "Neumünster." Why this very ancient church is called the "New Minster" is difficult to say, as it certainly existed before the year 854, when it is recorded that it was greatly injured by lightning. The apse, choir, and eastern transepts were rebuilt in the year 1000, but nothing now remains of this date except the curious crypt below the choir. The eastern portion of the building, and the very elegant octagonal tower, are probably not earlier than the thirteenth century. The western portion of the church is covered by a vast octagonal dome and lantern, which was completed in 1731. Below it, however, is a very ancient crypt containing the well in which the bodies of St. Killian, St. Totnan, and St. Colonatus were found after their martyrdom, about the year 687; it is possible that some portion of this crypt may be part of the church erected in 854; but, like the rest of the interior of the building, it was all modernised about 1730.

In the court between the cathedral and the Neümünster towards the east of the latter church Walter von der Vogelweid was buried in 1720. He is best known to the English public by Longfellow's charming poem, which relates how,—

> "Vogelweid, the Minnesinger,
> When he left this world of ours
> Laid his body in the cloisters,
> Under Würtzburg's minster towers."

The poem goes on to relate how the poet left by his will a sum of money to be expended upon loaves of bread to feed the birds upon his tomb, which was carried out, and,—

> "Day by day, o'er tower and turret,
> In foul weather and in fair;
> Day by day, in vaster numbers,
> Flock'd the poets of the air."

All went on well, and to the satisfaction of the birds, until some miserly old "abbot" (Longfellow is in error here, as the church was collegiate, and, of course, never had an abbot) considered the whole thing a piece of waste and extravagance, and ordered the loaves to be "changed to loaves henceforward for our fasting brotherhood."

Longfellow notices a fact which must have struck every observant visitor at Würzburg; that is, the number of birds always to be seen about this spot:—

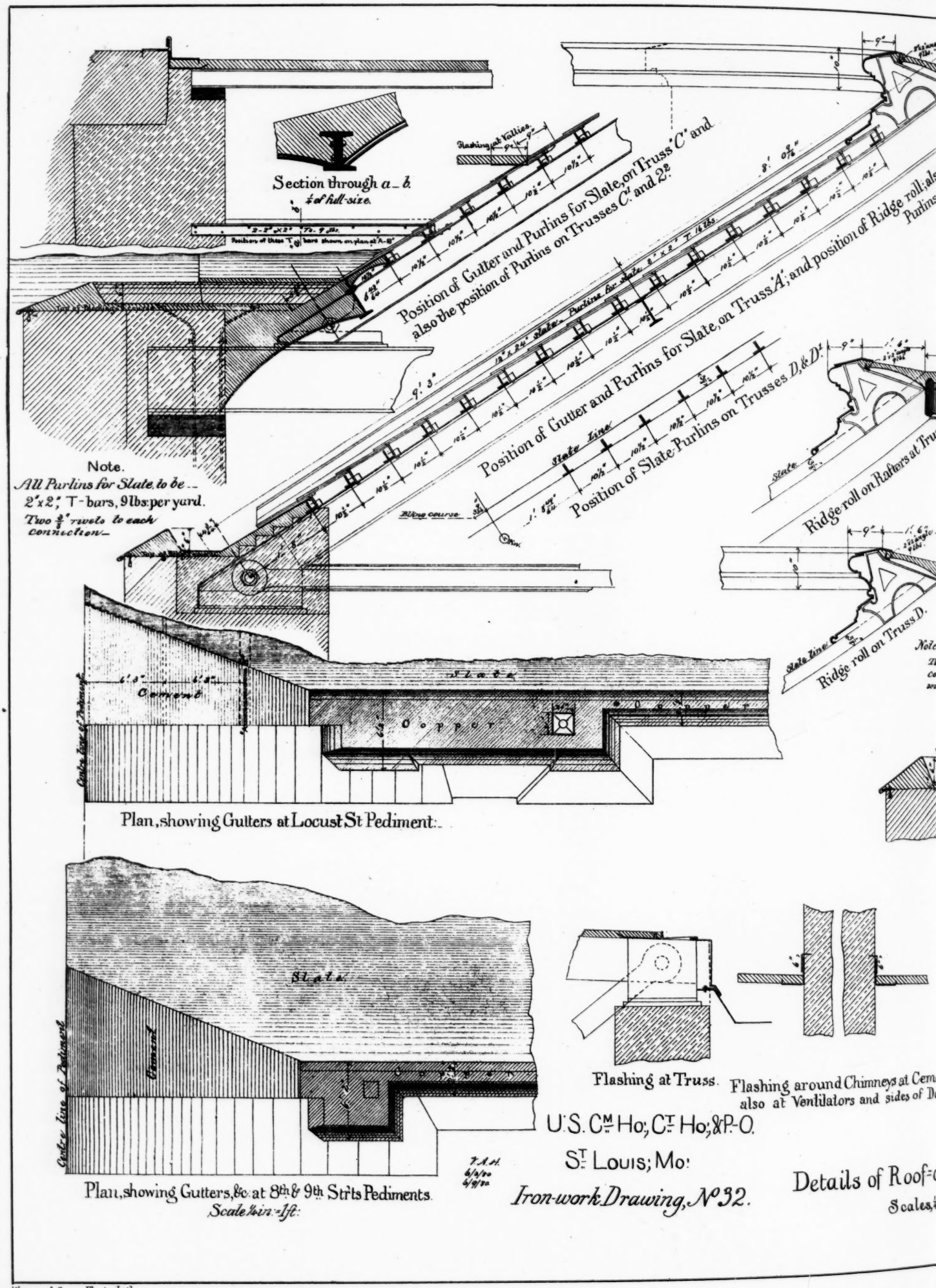
> "But around the vast cathedral,
> By sweet echoes multiplied:
> Still the birds respect the legend
> And the name of Vogelweid."

A small modern tablet affixed to the east end of the south aisle of the Neümünster was set up by King Ludwig as a memorial to Vogelweid; probably his original monument was destroyed when the cemetery was paved over and a street run through it. Some very remarkable cloisters were discovered at the Neumünster about a year ago, which were described and illustrated in the *Builder*.* Longfellow is probably in error in describing Vogelweid as being buried in the cloisters of the Neumünster, as the cloister was to the north of the church, but the cemetery was to the south. The cloisters of the cathedral, which are a most singular example of foreign "Perpendicular," are on the south side. They present one of the very few examples of Perpendicular tracery to be found out of England. The vaulting is also very remarkable, as each respond is opposite to the centre of its opposite bay. Thus the diagonal forms the main rib. Both the cathedral and the minster contain many interesting monuments. Those in the former church have been previously alluded to and one of them illustrated in the *Builder*.

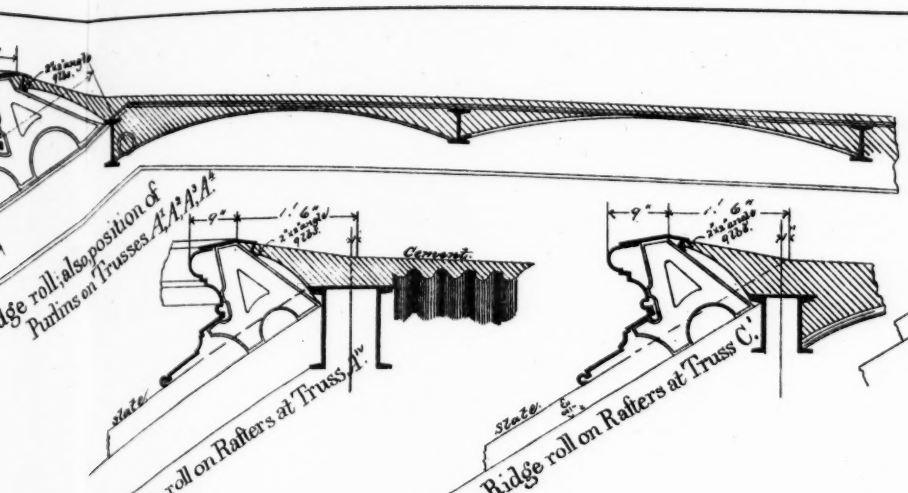
H. W. B.

International Health Exhibition, London.—This exhibition will be opened by the president, H.R.H. the Prince of Wales, on Thursday, the 8th of May, at 3 p.m.

* See vol. xlv., pp. 179, 182.


Section through a–b.
½ of full size.
Position of Gutter and Purlins for Slate, on Truss 'C' and also the position of Purlins on Trusses C¹ and C².
Position of Gutter and Purlins for Slate, on Truss 'A'; and position of Ridge roll, als
Position of Slate Purlins on Trusses D, & D¹.
Note.
All Purlins for Slate, to be –
2"x2", T-bars, 9 lbs: per yard.
Two ⅞" rivets to each connection.
Ridge roll on Rafters at Tru
Ridge roll on Truss D.
Plan, showing Gutters at Locust St Pediment:-
Plan, showing Gutters, &c. at 8th & 9th Str'ts Pediments.
Scale ½ in = 1 ft:
Flashing at Truss.
Flashing around Chimneys at Cem
also at Ventilators and sides of D
U.S. Cm Ho; Ct Ho; & P.O.
St Louis; Mo:
Iron-work Drawing, № 32.
Details of Roof-
Scales,

Wyman & Sons, Photo-Litho

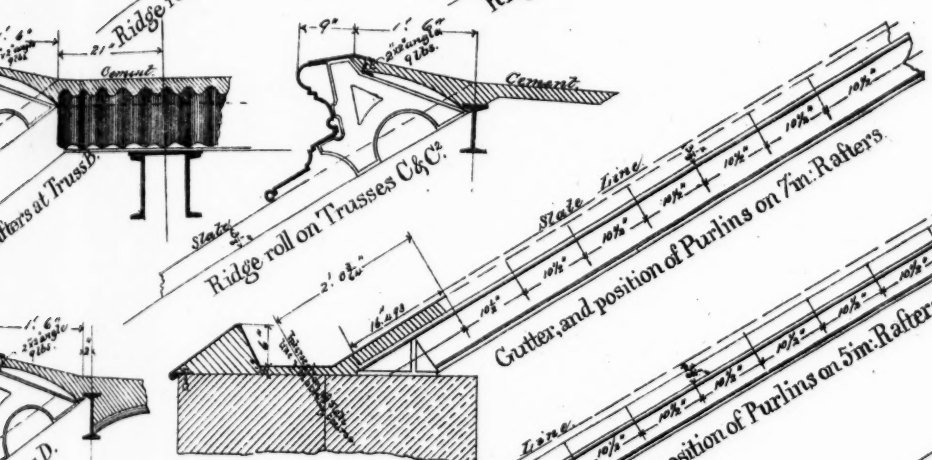


dge roll; also position of Purlins on Trusses A' A² A³ A⁴.

Ridge roll on Rafters at Truss A'.

Ridge roll on Rafters at Truss C'.

Ridge roll on Truss D'.



fters at Truss B.

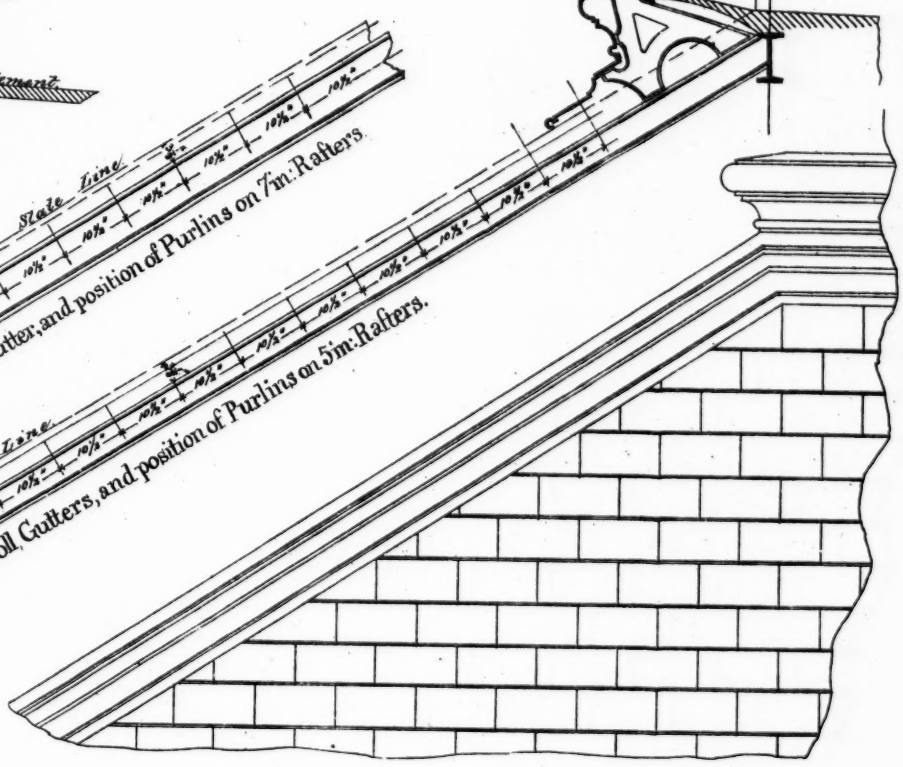
Ridge roll on Trusses C & C².

Gutter, and position of Purlins on 7½m: Rafters.

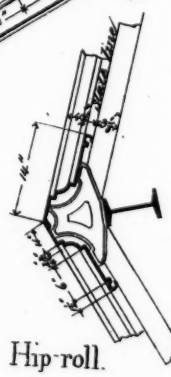
Ridge-roll, Gutters, and position of Purlins on 5½m: Rafters.

russ D.

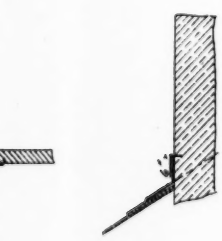
Note.
Two ⅞" rivets to each connection of purlins with Rafters.

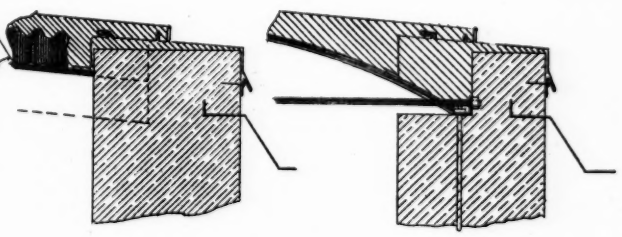


Elevation, showing Hip and Ridge-rolls.

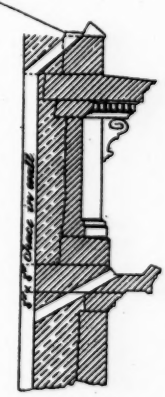


Hip-roll.





Flashing at Arches.



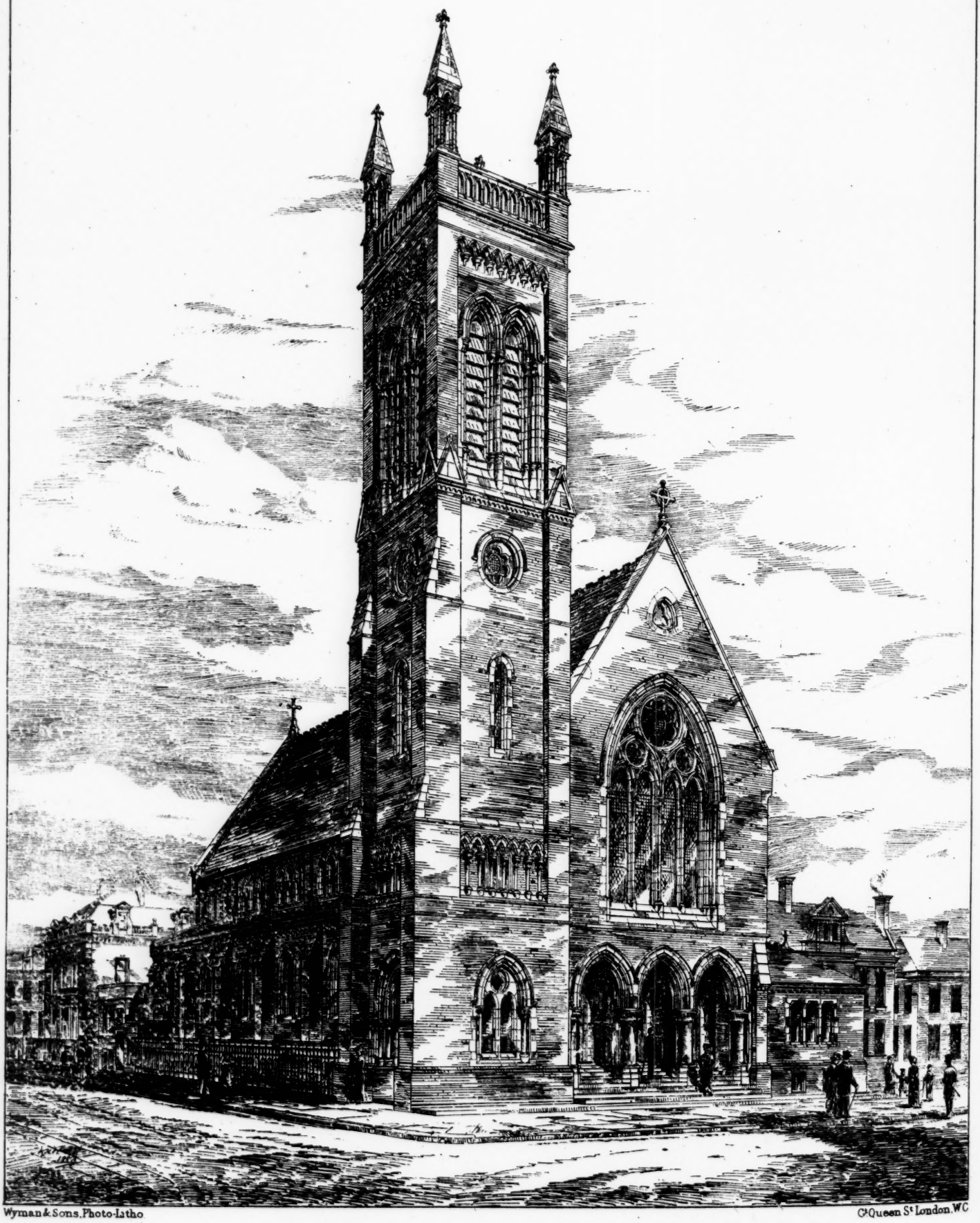
Section showing connection of Roof & Main Cornice gutters with down pipe in wall.

s at Cement Deck and Slate Roof.
des of Dome wall.

Roof-covering and Flashing:-
Scales ½, ¼, and 1in:=1foot.

Supervis. Architect
Treas. Depar

Gt Queen St London, WC.



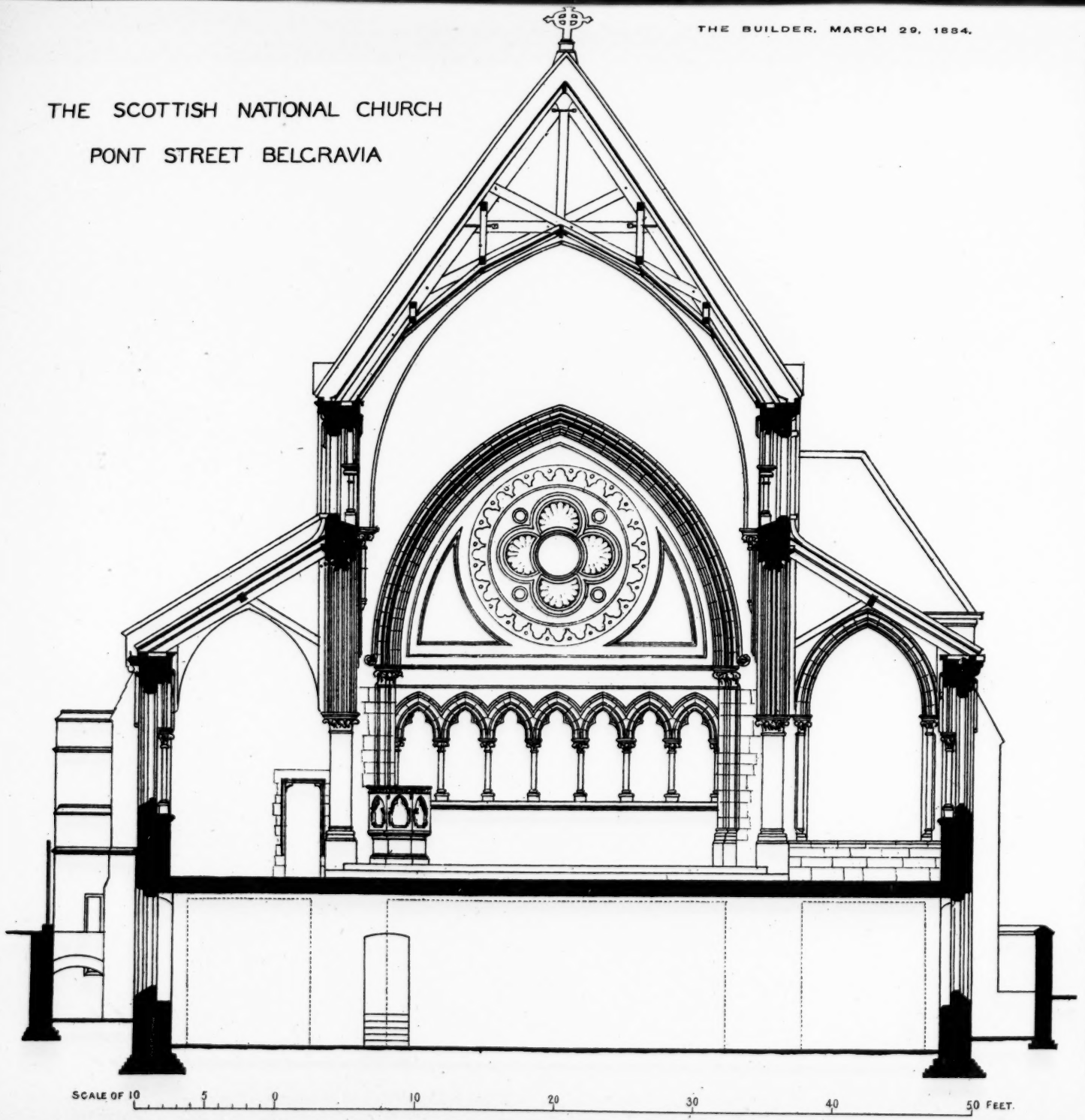
Wyman & Sons, Photo-Litho. 74 Queen St London, W.C.

THE SCOTTISH NATIONAL CHURCH, PONT STREET, BELGRAVIA.

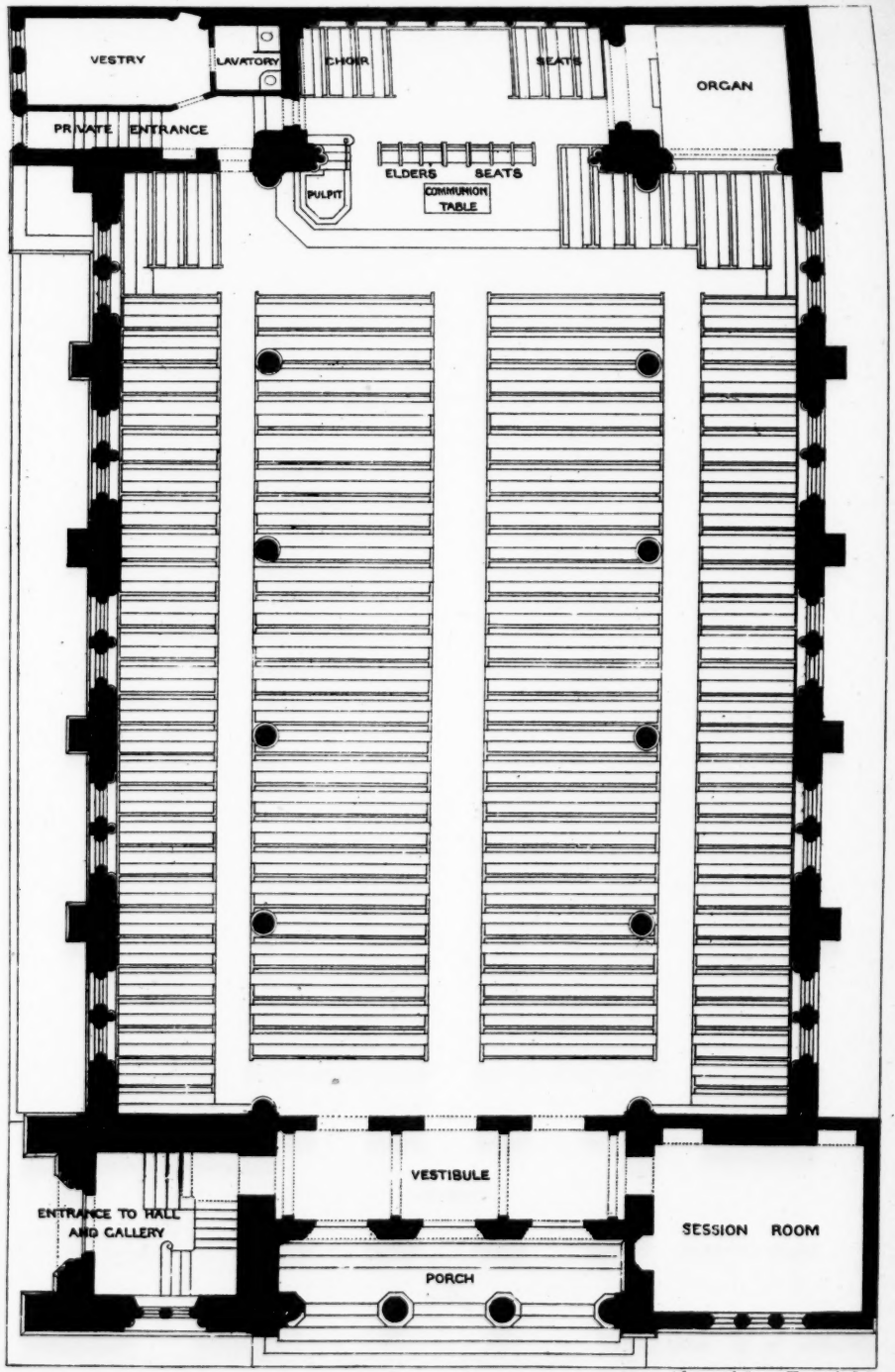
MR. J. MACVICAR ANDERSON, F.R.I.B.A., ARCHITECT.

THE SCOTTISH NATIONAL CHURCH

PONT STREET BELGRAVIA



SCALE OF 10 5 0 10 20 30 40 50 FEET.



Wyman & Sons. Photo-Litho.

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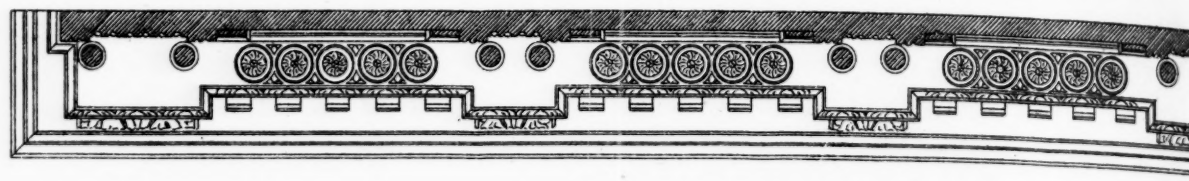
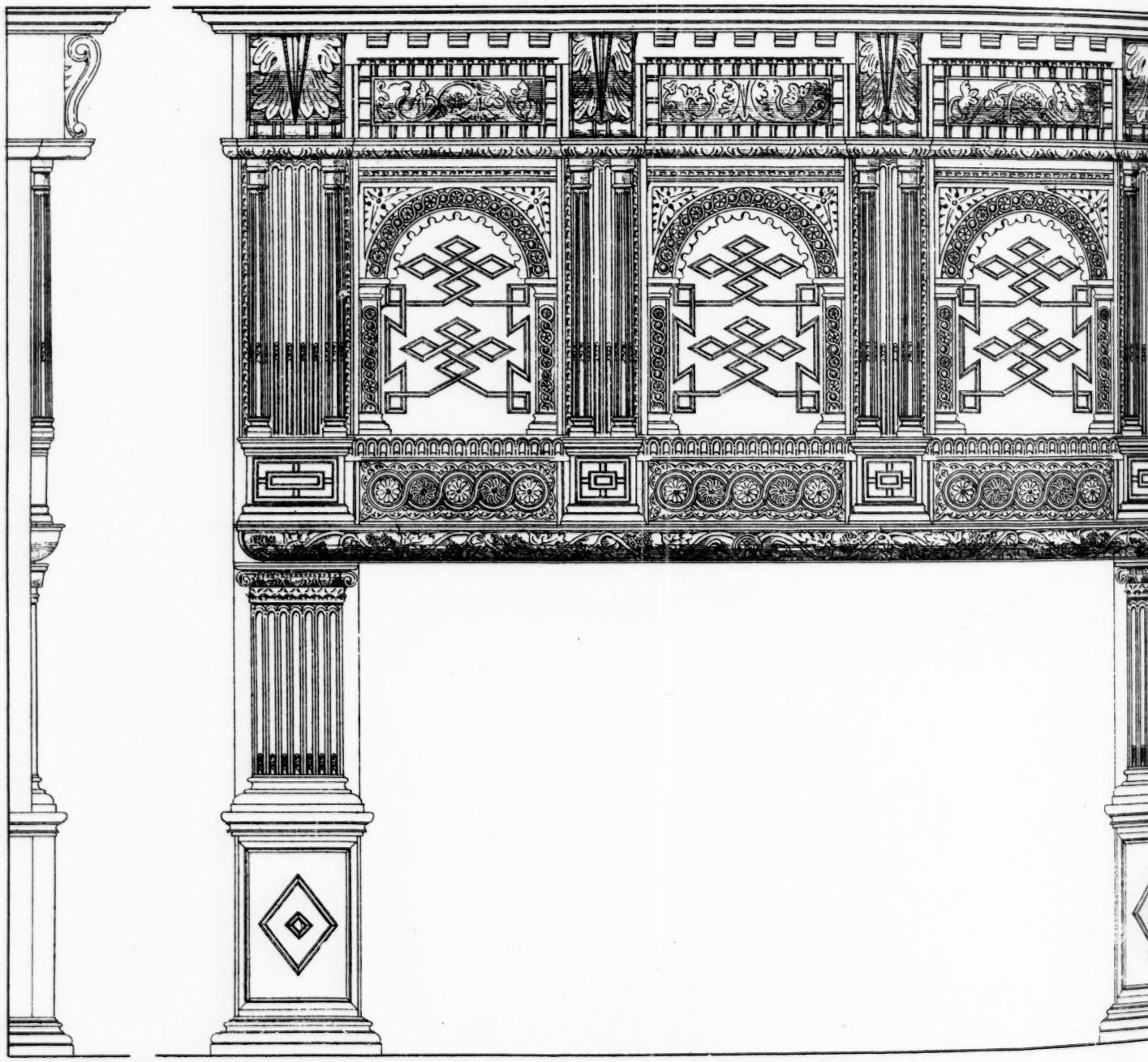
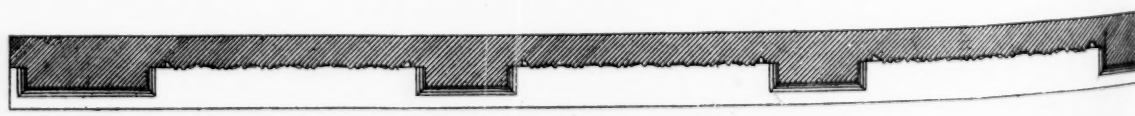


Plan at b
(looking up)



End Elevation

Front Elevation



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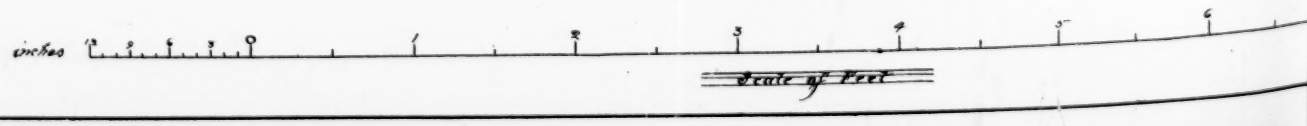
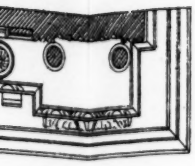
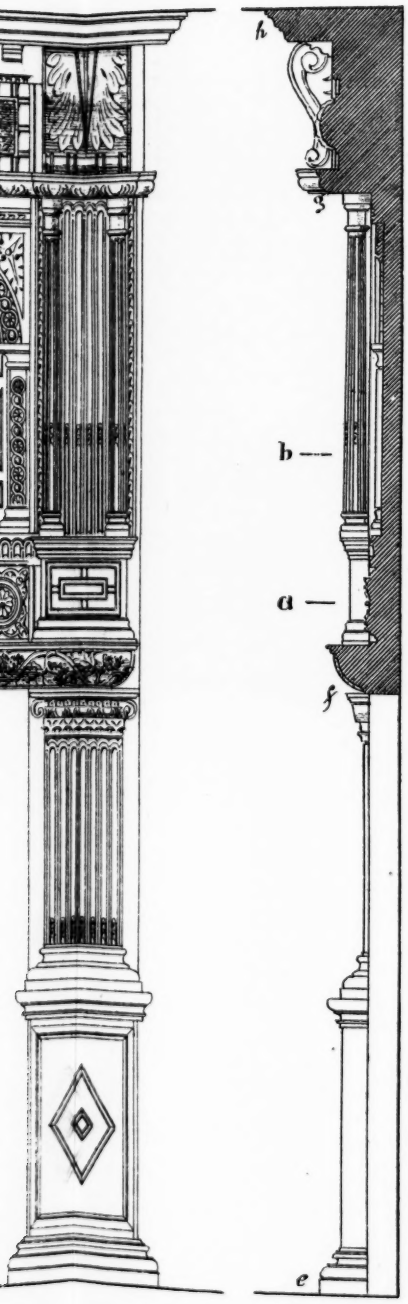
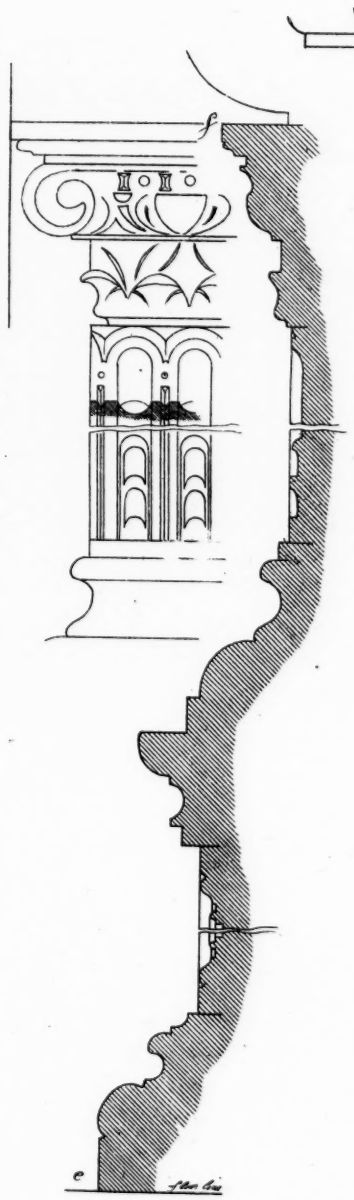


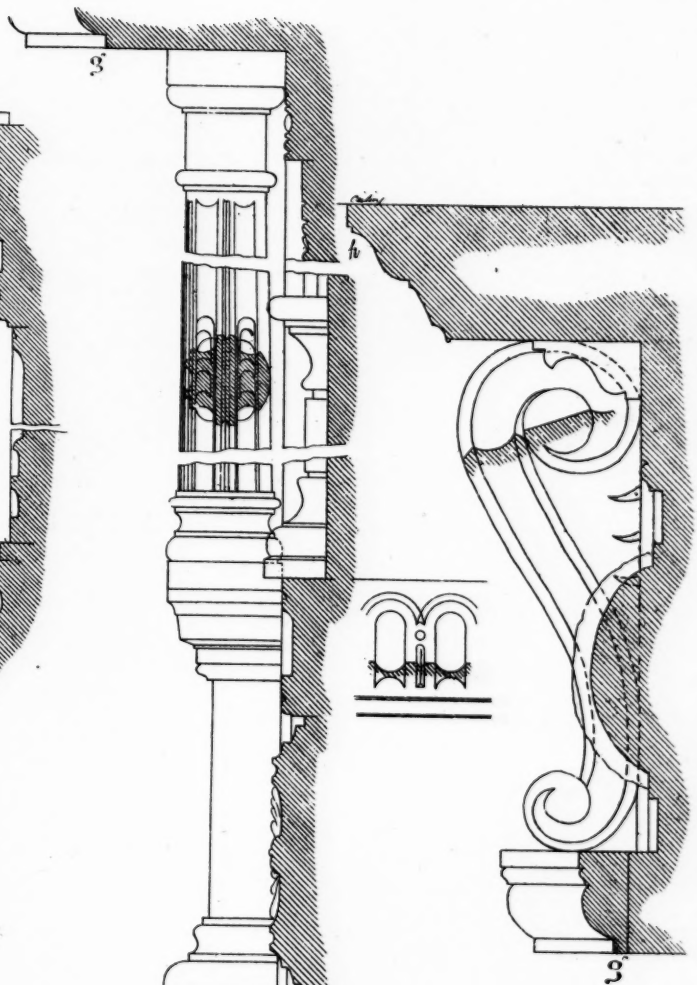
C. F. Kell Photo-Lith & Printer.

Old · Chimney · Piece · at · Ipswich









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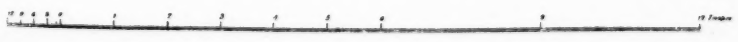
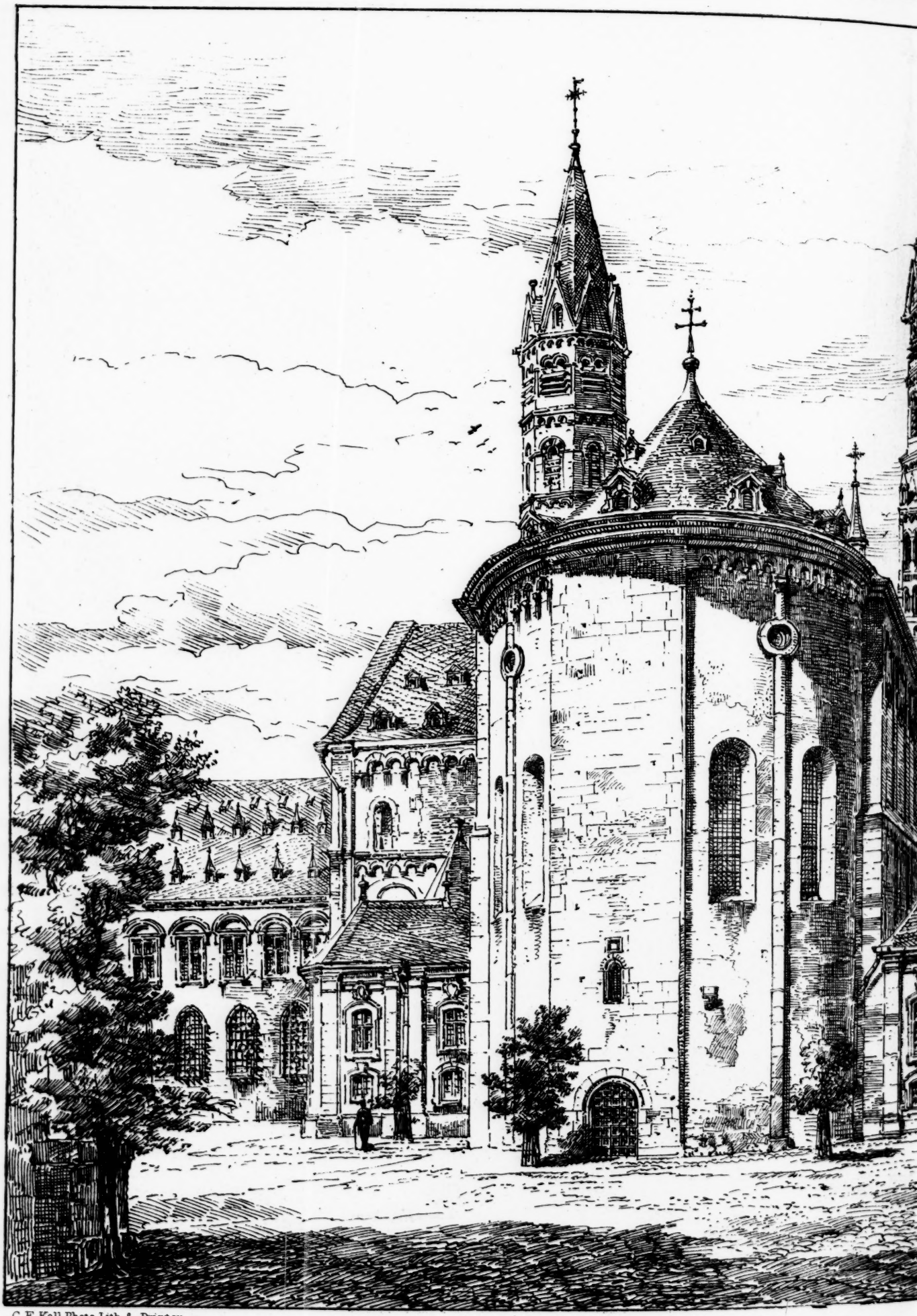


MEASURED AND DRAWN BY

MR. FRANK BROWN,

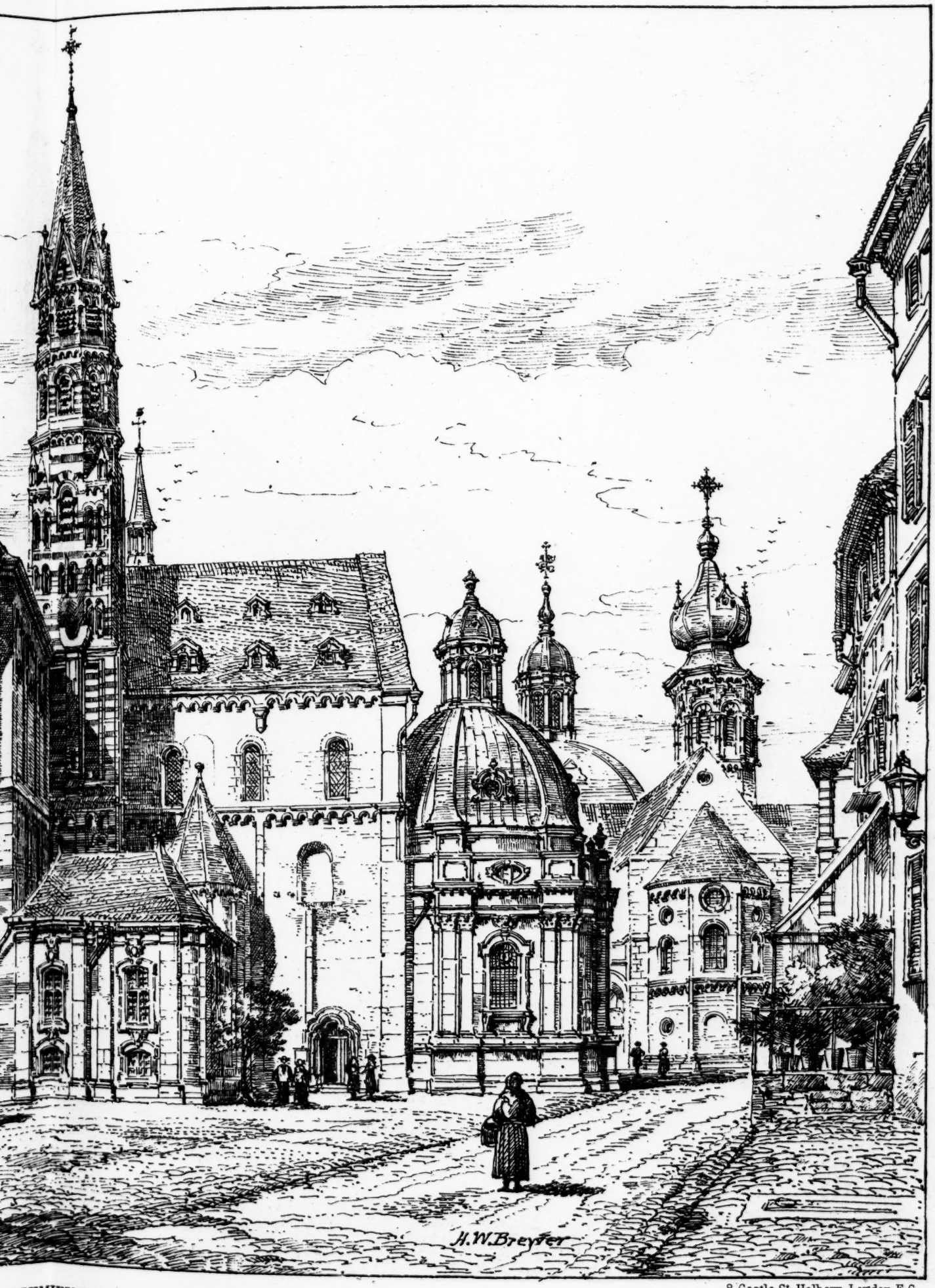
SEPTEMBER, 1884.



C. F. Kell, Photo-Lith. & Printer.

THE CATHEDRAL AND NEUM

SCENE OF LONGFELLOW'S POEM,



NEUMUNSTERKIRCHE, WÜRZBURG.

'S POEM, "WALTER VON DER VOGELWEID."

8 Castle St Holborn, London E.C.

THE BUILDING TRADES' EXHIBITION.

THE fifth annual Building Trades' Exhibition, now being held in the Agricultural Hall, Islington, though it includes a fairly good representative collection of building materials and workmanship, is scarcely so large and hardly as varied in its contents as last year's show. Several prominent exhibitors in previous years are this year absent from Islington, preferring to reserve their energies for the International Health Exhibition at South Kensington. Their places are supplied by other exhibitors, some of whom are positive accessions to the exhibition. Among such exhibitors we may especially instance Messrs. Wedgwood & Sons, whose exhibits are referred to further on. But, although there is what is described in one of the daily papers as an "overflow arrangement" in the galleries, the ground-area of the hall is barely filled, even though carriages and furniture are called in here and there to eke out the space. The contents of the galleries are very meagre, and, with the exception of a few architectural drawings, have for the most part nothing to do with building. For the greater portion of Monday the exhibition was the scene of much confusion and noise, caused by the dilatoriness of some of the exhibitors, who were only then erecting their stands and getting their goods into position, greatly to the discomfort, not only of visitors, but of those exhibitors who had everything in readiness for the opening of the exhibition. It is only fair to the management to say that this unreadiness is solely due to the exhibitors themselves. By the time these words are published, however, the exhibition (which is to remain open until Saturday, April 5th) will have been put into proper order, and will, no doubt, as in former years, attract large numbers of visitors; for, needless to say, there is much to be seen by everybody, and here and there something to be learned by experts, although, as far as we could see, the exhibition does not contain many novelties of a notable character. Without further comment on the exhibition as a whole we proceed to notice some of the individual exhibits, taking the names of exhibitors in alphabetical order, inasmuch as the numbering of the stands is somewhat complicated.

The Albion Concrete Company (Bay 4), of Glengall-road, Old Kent-road, exhibit a built-up bay-window made of their material, of a buff tint. This is one of a series of bays being made by the Company for Mills's Hotel, St. George's-road, Southwark, from designs by Mr. H. W. Flack, architect. The same exhibitors show some pieces of cornice, balustrading, and other details in red-tinted concrete, executed by them for the new building in Marylebone-road for Madame Tussaud's Exhibition, Mr. F. W. Hunt, architect. The material has a good surface, and the arrises come out sharp and clean.

Messrs. Allen & Genge (Bay 75 in Arcade), of Devonshire-street, Theobald's-road, exhibit some good work in canvas and plaster, including two well-modelled columns specially designed for the Hurlingham Club by Mr. R. W. Edis, F.S.A.

Messrs. Thomas Andrews & Co. (Stand D 129), of East Molesey, exhibit some well-made and useful joinery in pitch-pine and other woods, for ecclesiastical and domestic use. They also show a chimney-piece and over-mantel in pitch-pine.

Messrs. Ashton & Green (Ltd.), of St. Mary Axe, are mentioned in the catalogue as exhibitors of chimney-pieces and other goods, but at the time of our visit we could not discover their stand.

Messrs. J. L. Bacon & Co. (Stand E 176), of Upper Gloucester-place, Dorset-square, exhibit some of their well-known and largely-used hot-water apparatus in action, the wrought-iron tubes used being $1\frac{5}{16}$ in. in diameter, and capable of sustaining a high pressure. The wrought-iron furnace used requires no setting in brickwork.

Messrs. E. P. Bastin & Co. (Stand 244, East End), of West Drayton, are exhibitors of brick-making machinery and appliances for the hand-moulding process.

Messrs. Bellman & Ivey (Stand C 72A), of Wigmore-street, show Bellman's patent gully, a very good and simple appliance for receiving and disconnecting rain-water down-pipes, sink-wastes, &c. We have on previous occasions referred to it with commendation.

The Blackman Air-Propeller Company (Stand B 21), of Fore-street, show in action two of their mechanical ventilators, which have been largely used with good results in many manufacturing establishments where the presence of foul air, steam, and vapour would be injurious to the workpeople. There is a wide field for the employment of such appliances for ameliorating the generally (at night) overheated and vitiated atmosphere of printing-offices and other establishments where steam power is available.

Mr. J. M. Boekbinder (Stand D 126), of Thornhill-road, is an exhibitor of some excellent work in carton-pierre and fibrous plaster, including the side of a dining-room in the style of the Flemish Renaissance, with a panel filled with painted tapestry. The side of a drawing-room in Louis Seize style exhibits very careful modelling.

Messrs. John Bolding & Sons (Stand C 82), of South Molton-street, have on view a large display of sanitary appliances, including a new wash-out closet, called the "Alliance." They also show a seat-action syphon water waste-preventing cistern, so arranged that when the seat is depressed a weighted lever is drawn down, the release of this lever opening the valve and discharging the water forcibly through the syphon, effecting a good flush. Truss's "ever-sealed" stench-traps are another speciality at this stand. The traps are simple in construction, a metal valve acting on the end of the inlet-pipe within the trap, the valve-opening to allow of sewage matter passing from the house to the drain, and closing by its own weight, thus giving a mechanical as well as a water seal.

Mr. F. Botting (Stand E 151), of Mount-street, shows some of his sanitary appliances and kitchen fittings.

The Bower-Barff Rustless Iron Company (Stand B 36), of Queen Victoria-street, exhibit a variety of samples of cast and wrought iron treated by their method, which is stated to be less costly than the galvanising process, while being absolutely permanent in its effects. If this be so it ought to be more largely used than it is. Among the specimens of ironwork exhibited as having been treated by the process is a nicely-wrought flower-stand executed by Messrs. Hardman.

Messrs. C. J. Boyce & Co. (Stand 248), of Miles's-lane, Cannon-street, exhibit saw benches and other machinery for the joiner's and carpenter's shops.

The Bracknell Pottery Company (Stand A 2), have a good display of hand and machine made red facing bricks, together with roofing and paving tiles, ridges, finials, &c., all exhibiting excellence of manufacture.

Mr. W. Brass, jun. (Stand C 84), of Old-street, exhibits his patent reflecting pavement lights, and a system of slab plastering very like something which has been seen before.

Messrs. Broad & Co. (Stand E 162), of Paddington, are exhibitors of white enamelled ware made by the Bourtreehill Company. They also have on view sanitary stoneware, including their registered gully and a new air inlet. Broseley and other tiles, ridges, finials, and bricks go to make up the remaining contents of the stand.

Mr. E. H. Brown (Stand 252, south side), of Kingsbury Works, Ball's Pond, exhibits a strong horizontal steam hoisting and winding engine, together with a mortar-mill, circular saw benches, band-sawing machine, and the "Cheap" friction barrow hoist,—all of them very useful items of builders' plant.

Messrs. Butters Bros. (Stand 284, North-west Corner), of Glasgow, are exhibitors of derrick cranes and other appliances used in building.

Messrs. Capper, Son, & Co. (Bay 12), of Ingram-court, Fenchurch-street, show Pearson's new patent water-economising closet, which deserves inspection. The same firm are also exhibitors of Pearson's "twin-basin" closets (of which we have previously spoken on several occasions), and of some very handy and compact folding lavatories, suitable for use in offices, on board yachts, and, in fact, in any situation where space is limited and where tidiness is a desideratum.

Messrs. Chambers, Monnery, & Co. (Bays 55 and 56 in Arcade), of Bishopsgate-street, show Monnery's patent iron wall ties, for use in building hollow walls. The newest forms of these ties have turn-down points at the extremities, affording a better hold of the brickwork, while the central portion is made with shoulders which abut against the inner faces of the walls, materially strengthening them and lessening the possibility of their being pushed inwards. This firm also exhibit the "Bishopsgate" mantel and grate, the "Larbert" cooking-range, and some other ranges, well suited for use in artisans' dwellings.

Messrs. Clark, Bunnett, & Co. (Stand A 8), of Rathbone-place, are exhibitors of their self-sustaining lifts, hydraulic hoists, revolving shutters, spiral iron staircases, and brass and bronze castings for ornamental and constructive purposes. Their "Kaio Kapnos" stove, the invention, if we remember aright, of an architect, is also shown at this stand.

Messrs. W. R. Crow & Son (Bays 57 and 58 of Arcade), of Benjamin-street, are exhibitors of good assortment of yellow doors and mouldings, balusters, handrails, newels, and general house joinery, well worth the inspection of builders.

Messrs. R. F. Dale & Co. (Bay 1), of Southwark, are exhibitors of plumbers' brasswork and sanitary fittings and earthenware.

Messrs. H. & C. Davis & Co. (Stand C 98), of Camberwell-road, exhibit some very good gas-stoves, foremost amongst which we must mention the "Metropolitan" gas-kitchener, which is highly spoken of by those who have used it.

Mr. T. H. P. Dennis (Stand F 190), of Chelmsford, shows his new patent lock furniture and his systems of glazing. With regard to the former, the spindle of the lock is tapped with a screw-thread at each end, in the direction of its length. The knobs are also tapped in the centre of their outer end with the same screw-thread as the spindle, and they are secured to the spindle by a uniting screw which passes through the knob and engages into the screw-thread of the spindle.

Messrs. Diespeker & Co. (Stand F 222) exhibit some good specimens of marble mosaic work.

Messrs. M. C. Duffy & Son (Bays 73 and 74 of Arcade), of Storks-road, Bermondsey, show a variety of building and general turnery, including balusters, newels, table-legs, &c. They offer thirty-six patterns of balusters at one uniform low price.

Messrs. Esdaile & Company (Stand B 38), of Wenlock Basin, City-road, exhibit doors and other joinery of Swedish and American make, besides English joinery and mouldings both English and foreign, hand and machine made plasterers' laths, and some well-made pulley-blocks suitable for builders' use.

The Eureka Concrete Company (Stand E 172), of West Kensington, exhibit one bay of the arcade of the Upton Congregational Church, Forest-gate, now in course of erection from the designs of Messrs. T. L. Banks & Townsend, architects. We shall shortly give an illustration of this building.

Messrs. George Farmiloe & Sons (Bay 19), of St. John-street, Smithfield, make a good display, prominent among their exhibits being three of American manufacture, viz., the Dubois drawn-lead traps, the "Gibson" pump, and a case full of bib, range, and stop valves. The Dubois traps are now tolerably well known, so we will only say that besides the ordinary stock patterns, one known as Emptage's pattern is on view. It is claimed that a trap of this form will hold its seal secure under the most trying conditions. The "Gibson" pumps are made for forcing and lifting. They are of iron, lined with brass, and are strong and simple, while they are only about half as costly as the usual brass pumps. The plumbers' brasswork from America exhibits good workmanship, and affords another illustration of the foreign competition which is now so marked a feature of many trades, even of those connected with building. English manufacturers and workmen will evidently, however harmonious their relations, have to battle sturdily to hold their own in some directions. The "Rainbow" steam water and liquid raiser, shown at this stand, is virtually a steam pump without any working parts, but it was described by us not very long ago. Among water-closets, of which several varieties are shown at this stand, is a speciality in wash-out closets, named the "Eos," which has several good points. It is complete in one piece of earthenware, has no metalwork or movable parts, supersedes the use of a trap on or under the floor-line, is always trapped, and maintains a good depth of water in the basin. The flush (supplied through a 1¼-in. pipe from a water waste-preventer of special construction) is very efficient, being so directed as to carry everything before it. The basin is round, so that it may be set right or left hand. The water waste-preventer, which has been

designed by Mr. Raitt, consists of an outer chamber from which the supply-pipe before mentioned is taken. In this outer chamber a semicircular trough is pivoted, which, when full of water, is suddenly tilted up so as to discharge its contents at once into the outer chamber, whence they are conveyed to the closet basin by the pipe.

Mr. J. J. Greenwood (Stand B 55), of Lot's-road, Chelsea, is an exhibitor of marble chimney-pieces and fenders, encaustic tiles, and roofing slates.

Messrs. Griffiths, Berdoe, & Co. (Stand B 35), of Leadenhall-street, are exhibitors of the Sanitary Paint Company's non-poisonous paints and colours.

The Hastings Hydraulic Freestone Company (Bay 23A), exhibit specimens of their material, which is an artificial stone of fine texture, much resembling Portland in appearance.

Messrs. Hayward Bros. & Eckstein (Stand C 88), of Union-street, Borough), are exhibitors of Hayward's patent semi-prism and other pavement lights, shown applied also to stairs, stallboards, and in other situations. Sheringham ventilators, Boyle's mica-flap ventilators, and Howard's Archimedian screw ventilators, are among the variety of appliances shown at this stand.

Mr. T. W. Helliwell (Stand D 122), of Westminster Chambers, shows models exhibiting his patent method of glazing without putty, and his system of fixing zinc roofing without bolts or rivets.

The Hygienic and Sanitary Engineering Company (Bay 11), of Charing-cross, exhibit Mr. D. T. Bostel's well-known "Brighton Excelsior" water-closets in action.

Mr. E. S. Hindley (Stand 286, north side), of Bourton, exhibits vertical and horizontal engines well adapted to builders' use, besides circular and band saw benches of good construction and embodying the most important of recent improvements.

Messrs. C. Hindley & Sons (Stand D. 135), of Oxford-street, exhibit two or three wooden mantelpieces, painted, together with some tasteful though inexpensive wall decorations, Japanese leather papers, &c.

Messrs. Hodkinson & Clarke (Stand B 45), of Small Heath, Birmingham, are exhibitors of internal and external window shutters and fittings, blinds, &c.

Mr. Thaddeus Hyatt (Stand D 128), of Farringdon-road, makes a good display of his prismatic pavement lights and lens lights for floors, roofs, stairs, stallboards, and other situations.

The Indestructiable Paint Company (Stand E 171), of Cannon-street, exhibit samples of their materials and of the effects of their application to various purposes.

The Imperial Stone Company (Stand D 130), of East Greenwich, exhibit the capabilities of their material as applied in the form of sinks, steps, paving, window-sills, lintels, copings, and curbing. They also show specimens of silicated stone water-pipes, samples of "petro-silicon" for paving stables, cow-sheds, railway platforms, &c., and a hollow curb for facilitating the laying of telegraph and telephone wires in streets.

Messrs. George Jackson & Sons (Stand D 131), of Rathbone-place, exhibit some very good specimens of ceilings and cornices in patent fibrous plaster, and some wooden chimney-pieces and over-mantels in the mode of the day, with applied ornament. Among the columns exhibited is one of those made by the exhibitors for the new Ball-room at Sandringham, from the designs of Mr. R. W. Edis, architect. It is a good specimen of modelling, and the ornament on the lower part of the column is of very pleasing design.

Messrs. Jeffrey & Co. (Stand D 134), of Essex-road, Islington, make a display of their non-arsenical wall-papers, many of which are of good design and colour. The central decoration shown is an Italian damask design, by Mr. W. Scott Morton, and is worked in shades of flocks on a fine pattern printed in reds on a talc ground.

Mr. George Jennings (Stand C 102), of Stangate, exhibits a variety of buff terra-cotta door and window dressings, string-courses, air-bricks, &c. He also shows an ingenious arrangement of speaking-tubes combined with electric bells, and apparatus for warming and ventilating churches, schools, hospitals, and other large buildings. But these are only among the incidental exhibits, the contents of this stand consisting mainly of baths, lavatories, water-closets, and sanitary fittings generally. Most of Mr. Jennings's specialities are too well known to need description, but in calling the attention of visitors to the merits of his display in general we would especially mention the bath and bath fittings which are shown in action, and the automatic concealed urinal in mahogany case, with self-flushing arrangement, well suited for use in situations where a convenience of the ordinary type would be inadmissible.

Messrs. C. Kite & Co. (Stand E 149), of Chalton-street, show their well-known inlet and exhaust roof-ventilators, including a new application of the same to turrets of any architectural design.

Messrs. W. H. Lascelles & Co. (Stand 290, North Side), of Bunhill-row, are, as usual, strong in concrete work. Their principal exhibit is a Corinthian portico of buff concrete for a new Wesleyan chapel at Lynn, Mr. J. Hatchard Smith, architect. Another important exhibit is a large mullioned window in red concrete for the new wing of the Hospital for Diseases of the Chest, City-road, Mr. John O. Abbott, architect. Some wooden chimney-pieces and over-mantels of unpretending design, and a pair of well-made teak entrance-doors, are among the other exhibits of Messrs. Lascelles & Co.

Messrs. T. Lawrence & Son (Stand B 46), of Bracknell, are exhibitors of a small red brick structure exemplifying the way in which their bricks lend themselves to the carving of the now-prevalent "swags" of fruit and foliage. The carving has been done by Messrs. C. S. Kelsey & Son, of Robert-street, Hampstead-road.

Messrs. Lewis & Lewis (Stand 268, South Side) exhibit a large variety of useful plant for carpenters and builders, including the "Anerley" patent combined circular and band-sawing machine, the "Westminster" hand-feed planer, the "Kensington" mortising and boring machine, several other kindred machines, besides an improved friction hoist and an automatic plane-iron grinder.

Messrs. W. H. Lindsay & Co. (Stand B 39, of Paddington, show their reversible stair-treads and their patent steel decking for railway and road bridges.

The Madeley Wood Company (Stand E 168), of Ironbridge, make a good display of Broseley roofing tiles, ridges, and finials, all of good quality. They are also exhibitors of buff facing-bricks.

Messrs. Malkin, Edge, & Co. (Bay 6), of Burslem, exhibit a variety of encaustic and glazed tiles.

The Mangotsfield Pennant Stone Company (Stand B 44), of Bristol, show their stone, which is claimed to be particularly suitable for street paving, being as hard as granite, and affording a better foothold.

Mr. John Matthews (Bay 24), of Weston-super-Mare, exhibits Poole's patent bonding-roll square-cornered roofing tiles, which, it is claimed, are proof against wind-stripping and rain-drifting.

Messrs. W. F. Meakin & Co. (Stand D 139) show a full-sized model of a window fitted with their patent sash-fastener and opener. They also exhibit their oilable sash pulley.

Messrs. Messenger & Co. (Bay 13), of Loughborough, are exhibitors of horticultural buildings and appliances, besides boilers and other heating apparatus and an automatic cinder-sifter.

Messrs. Alex. McLean & Co. (Stand D 124), of Belvedere-road, Lambeth, make a display of their improved non-efflorescent Keene's cement, and of what is called "McLean's Decoration," which takes the form of embossed tiles or plaques of the cement in question, subjected to hydraulic pressure. The tiles can be made of any size up to 18 in. by 12 in., and, set in moulded panels of the same material, make a very effective wall and dado decoration, which can be coloured according to taste, and is absolutely fireproof and non-absorbent, besides being exceedingly hard and durable. The capabilities of this method of decoration are well shown in a series of panels designed by Dr. Dresser.

Messrs. Miller, Little, & Co. (Stand B 49), of Devonshire-street, Portland-place, show some well-painted tiles and glass panels.

Mr. Alfred Newman (Stand D 108), of Maddox-street, has an excellent display of exceedingly good wrought ironwork, domestic and ecclesiastical. A little way from his stall is erected a five-light lamp-standard, which is a remarkable specimen of wrought-iron work,—one of a series executed from the designs of Mr. F. B. Wade, architect, for the Duke of Westminster, and intended for the terrace in front of Eaton Hall.

Messrs. Newton, Chambers, & Co. (Stand 251, S.E. corner), of Thorncliffe Ironworks, Sheffield, are exhibitors of, among other things, the close and open fire cooking-ranges which constitute one of their specialities.

The Papier-Mâché Company (Stand E 180), of Wellington-street, Strand, have a good display of work in fibrous plaster, including a portion of the ceiling of the grand staircase of the Great Eastern Railway Hotel, Liverpool-street, executed to the design of Mr. C. E. Barry, the architect of the building. A number of panels and other details in papier-mâché and carton-pierre are also shown by this company, the excellence of whose work has been recognised for a great many years.

The Pennycook Glazing Co. (Stand C 101), of Glasgow, exhibit a model showing their method of glazing without putty, which is now becoming well known and largely used. It was described in our account of last year's exhibition.

The Phillips Lock-jaw Tile Company (Stand B 57), of Newport, Mon., exhibit Phillips's lock-jaw roofing tiles, single and double grip, which appear to be well calculated to afford security against dislodgment by wind.

Messrs. Piggott Bros. (West Gallery), of Bishopsgate-street, are exhibitors of tarpaulins, rope, and other articles in constant requisition by the builder, as well as of tents and marquees suggestive of shelter from wind and rain on the occasion of foundation-stone laying ceremonies.

The Pliable Wood Decoration Company (Stand A 5), of Wenlock-road, show specimens of dadoes, friezes, doors, and mouldings, decorated by their process, which is merely a very thin veneering, effected by special means.

Messrs. Quirk, Barton, & Co. (Stand C 96), of Gracechurch-street, show tin-lined lead pipe and sheet lead for water supply, cisterns, &c.

Mr. S. Ransom (Stand 277, West End), of Kensal-road, exhibits some good specimens of staircase work and hand-railing.

Messrs. Rendle Bros. (Stand D 136), of Westminster Chambers, exhibit their paint-remover, of the merits of which we spoke at length when it was introduced to the building trade more than two years ago.

Messrs. F. W. Reynolds & Co. (Stand 289, North Side), of Acorn Works, Blackfriars-road, have a large and varied display of wood-working and other machinery for builders' use, both for hand and steam power. Their new patent "General Joiner" is one of the most important of their exhibits, and appears to fully deserve its name,—the "Comprehensionist." This machine, which is shown at work, will plane two sides at once, work mouldings, try-up, square, rebate, chamfer, stop-chamfer, tongue and groove, rip, flat, feather-edge, cross-cut, bore and slot mortise, besides cutting tenons and shoulders, and doing a variety of other work. The machine is very compact; for, exclusive of the tenon and slot-mortising apparatus, it only occupies a space of 4 ft. 3 in. by 3 ft. 7 in. It should prove a great acquisition to many a small shop. In the new "Queen" combined circular and band-saw machine several improvements are noticeable. One of them consists in so mounting the fly-wheel that it does not interfere with the operation of cross cutting. Besides a number of mortising machines, Messrs. Reynolds exhibit a new-pattern mortar-mill and steam-engine combined, so arranged that the mill may be disconnected, and the engine used separately for sawing, hoisting, or other purposes. Messrs. Reynolds also exhibit a large model of a silo, showing their patented appliances for compressing ensilage.

Mr. C. G. Roberts (Stand D 106), of Haslemere, Surrey, shows his rain-water separator (which we mentioned some months ago) in working action. Shortly stated, its object is to automatically turn the first rush of water from a roof (full of impurities as the water which first passes over a town roof must be) into a waste-pipe, and to conduct the clean rain-water into a place of storage. The apparatus is very simple in action, and should prove of great service for country houses and in other situations where it is desirable to collect the rain-water.

Messrs. F. Rosher & Co. (Stand 291, North Side), of Upper Ground-street, Blackfriars, exhibit a variety of useful and excellent goods,

including red and white Suffolk facing bricks, red and white diapered and moulded bricks. string-courses, pateræ, &c., besides roofing and floor tiles in variety, ridges, finials, garden-edging, paving-bricks, &c.

The Rowlands Castle Brick and Tile Company (Stand F 202), for whom Messrs. F. Rosher & Co. are the sole agents, are exhibitors of red facing and moulded bricks of good colour, together with roofing tiles.

Messrs. J. Sagar & Co. (Stand 261, South Side), of Halifax, show a few useful machines for working wood.

Messrs. Salmon, Barnes, & Co. (Stand A 9), of Ulverston, show their revolving shutters and a self-sustaining lift.

Messrs. Shanks & Co. (Bay 10), of Barrhead, near Glasgow, are exhibitors of baths, lavatories, water-closets, and other sanitary fittings.

Mr. John Smeaton (Bay 11A), of Imperial Buildings, Ludgate-circus, is an exhibitor of bath and plumbing work, cast-lead "Eclipse" traps, and a hospital closet.

Messrs. H. Smith & Son (Stand F 205), of York-street, Lambeth, are exhibitors of patent bricks for facing external and internal walls. With these bricks it is easy to obtain a close joint on the face without decreasing the thickness of the internal bed of mortar. They will work in courses with ordinary stocks.

The Silicate Zopissa Company (Stand A 10), of Fish-street Hill, show samples of their composition for the protection of stone and other buildings from the action of town atmospheres.

Messrs. W. Æ. Smith & Co. (Stand 288, North Side), of Cremorne Works, Lot's-road, Chelsea, are exhibitors of some very useful wood-working machines, some of which we described at length last year. They are also exhibitors of "Bowers's Patent Separator" for purifying and softening water used for feeding steam boilers. By means of this apparatus the feed-water is heated to a temperature only 10° lower than that of the water in the boiler. The invention is intended to effect a mechanical precipitation of the mineral salts and other impurities existing in the feed-water, and to prevent their entrance into the boiler, so as to render the formation of scale impossible. This is an invention which should be looked at by all steam users.

Messrs. Archibald Smith & Stevens (Bay 2), of Queen's-road, Battersea, are exhibitors of self-sustaining single and double lifts, suitable for use in hotels, restaurants, and other large establishments. They also show a working model of Stevens and Major's patent hydraulic-balanced passenger lift, Russell's patent "Wonderful" self-feeding open fire-grate, and a number of other things which will well repay the attention of visitors.

Messrs. Smith & Turner (Stand A 17), of Bartholomew-close, exhibit their excellent adjustable double-action door-springs, some with a specially shallow box for use over iron girders, where little depth for sinking the box is to be had. Their water-bars, bolts, and catches for French casements are also worthy of notice.

Mr. J. Stannah (Stand F 211), of Southwark Bridge-road, shows a 5-cwt. hand-power "Southwark" lift, fitted with Stannah's patent safety apparatus. A smaller lift, to carry 1½ cwt., is shown. These lifts are provided with iron guides, which are light in appearance and take up less space than the old-fashioned wooden guides. The same exhibitor shows the "Southwark" lift gear and friction hoist, and the patent "Pendulum" pump.

Mr. Edward Story (Stand C 73), of St. Benet's-place, Gracechurch-street, exhibits specimens of the Gunnislake granite, a silver-grey material of a very fine and hard texture.

The Victoria Stone Company (Bay 26), of Kingsland-road, exhibit several applications of their useful material.

Messrs. G. Waller & Co. (Bay 17), of Holland-street, Southwark, are exhibitors of penstocks, manhole flaps, gully-boxes, sewer ventilators, flushing-boxes, and traps, valves, and tools of various kinds required in the construction or maintenance of a sewerage system. They also exhibit street "orderly" bins of iron, and dust-bins of the same material.

Messrs. Frederick Walton & Co. (Stand C 92), of Berners-street and Staines, are exhibitors of their well-known decorative material known as "Lincrusta-Walton," now so largely used as a wall decoration.

Messrs. S. H. Watkins & Co. (Stand D 127), of Brentford, exhibit various kinds of building materials and made-up articles, such as doors, cisterns, &c.

Messrs. Waygood & Co. (Bay 15), of Falmouth-road, Great Dover-street, have a good display of their lifts, including their hydraulic-balanced passenger lift, a hand-power goods lift (with safety apparatus), and double and single dinner lifts.

Webb's Worcester Tileries Company (Stand D 141), of Rainbow Hill, Worcester, are exhibitors of a very good assortment of mosaic and encaustic tiles, good in texture and colour. They also exhibit their new printed underglazed hearth and other tiles.

Messrs. Josiah Wedgwood & Sons (Stand E 178), of Etruria, Stoke-upon-Trent, have a very attractive display, including a number of Wedgwood jasper plaques, as used for chimney-pieces for the Earl of Aberdeen, and for string-courses, panels, and clock-faces for the Earl of Dysart. This historical firm are also exhibitors of impressed tiles suitable for hearths, jambs, and other uses. Visitors will find it well worth while to inspect the contents of this stand.

Mr. W. White (Stand 292, North Side), of Westminster-chambers and Abergavenny, exhibits his "Hygeian-Rock" building composition, which has been noticed by us in terms of commendation on previous occasions. Its name is intended to express both its sanitary value as a preventive of damp walls and its constructive value in point of strength. At the time of our visit on Monday two beams of brickwork, one of 14 in. work, and the other of 9 in. work, put together with this composition a few days previously, and each having a bearing of about 5 ft., were shown with loads of 12 cwt. and 6 cwt. respectively suspended from their centres, and the damp-resisting properties of the material are also shown under test.

The Willesden Paper Company (Stand 294, North Side) are exhibitors of their patent paper and canvas for roofing and other purposes.

Messrs. Williams & Nash (Stand E 164), of Castle-street, Holborn, in addition to a variety of marble chimney-pieces, show a number of specimens of very beautiful Devonshire marbles, which are well worthy of inspection, as are also an old marble chimney-piece and a hall-table, removed from an old mansion at Clapham pulled down. These specimens of marble-masons' work of a few generations back are unpretentious and solid, and present a marked contrast to some of their cheap successors.

Messrs. Woollams & Co. (Stand D 137), of High-street, Marylebone, exhibit some excellent wall and ceiling papers, artistic in design, and guaranteed to be entirely free from arsenic. Dado decorations of various kinds, raised flocks for painting over, patent embossed flocks, and damask and chintz papers on mica grounds, are here to be seen in various styles and colours, some of them having been specially designed by Mr. A. Silver, Mr. A. F. Brophy, Mr. Bernard Dicksee, Mr. H. Noble, Mr. Owen W. Davis, Miss Louise Aumonier, and other artists. Messrs. Woollams & Co. also show the wall-paper designs of Messrs. Watts & Co. (Limited), for whom they are agents. These designs, we are told, were drawn and coloured by Messrs. G. F. Bodley, A.R.A., Thomas Garner, and G. Gilbert Scott. They also show a collection of patterns for wall and ceiling coverings, designed by Mr. John Aldam Heaton. Altogether this stand, as usual, is well worth the attention of visitors.

The Woolpit Brick and Tile Company (Bay 23), of Moorgate-street), exhibit red and white Suffolk facing bricks, of very good quality and colour, as well as white and red moulded bricks.

Mr. George Wright (Stand 167 E), of the East Acton Brickworks, exhibits an erection showing the capabilities of his bricks, which appear to be of excellent quality, and likely to show to even better effect in building on a large scale than they do in the miniature structure erected by Mr. Wright.

Messrs. Yates, Haywood, & Co. (Stand 245, East End), of Rotherham and Upper Thames-street, exhibit a large collection of stoves, kitcheners, railings, and builders' ironwork generally. They also display a number of cast-iron chimneypieces and over-mantels in the prevailing so-called "Early English," "Queen Anne," and "Adam" styles. As specimens of casting they are, no doubt, very good and sharp, but here we not only have details of wood and stone construction (even to broken pediments and other eccentricities) reproduced in iron, but they are actually painted and grained to resemble oak and other woods, carvings and all!

Messrs. J. A. Young & Co. (Bay 2 A), of Victoria-chambers, Westminster, are exhibitors of stable and manger fittings, which possess some desirable features.

We have now mentioned all the principal exhibits, but may possibly say more about some of them in our next.

NATIONAL STANDARD THEATRE.

THE following are the alterations required by the Metropolitan Board of Works to be executed by the owners:—

1. That a proper proscenium-wall of brick, not less than 14 in. thick, be built to divide the stage from the auditorium, and that such wall be carried up to a height of 3 ft. above the roof, the height being measured at right-angles to the slope of the roof; that a brick wall, 14 in. thick, be built beneath the stage, in a line with the soffit of the proscenium opening, to divide the cellar under the stage from the space under the auditorium; that the existing wing walls be permitted to be utilised, so far as they are serviceable, in the construction of the proscenium-wall; that not more than three openings, each opening not exceeding 3 ft. wide and 6 ft. high, be formed in the proscenium-wall, exclusive of the proscenium-opening; that no openings be formed above the level of the stage, and that all openings in such walls be closed with wrought-iron doors not less than ¼ in. thick in the panel, in wrought-iron frames, hung so as to close of themselves.

2. That the theatre be separated from all adjoining premises used as dwelling-rooms, stores, or for any purpose other than that of the theatre, vertically by brick walls, and horizontally by proper party structures, and that all openings between the theatre and such adjoining premises be stopped up with brickwork in cement the full thickness of the walls in which such openings are situated.

3. That the pit-stall entrance from George-street be made 6 ft. wide throughout, and be separated from the entrance to the dwelling-house adjoining on the east by a brick wall not less than 9 in. thick, and do have a ceiling formed of fire-resisting materials to be approved by the Board.

4. That the staircase from the balcony to the upper circle, and the pass staircase between the dress-circle and the upper-circle, be rebuilt; that the steps and landings of such staircases be constructed of solid tooled York or other approved stone, 4 ft. 6 in. wide, supported and enclosed upon all sides by brick walls not less than 9 in. thick, with arches turned under the landings and ceilings, formed of fire-resisting materials to be approved by the Board.

5. That the staircase from the ground-floor to the lower circle be rebuilt; that the steps and landings of such staircase be constructed of solid tooled York or other approved stone, 4 ft. 6 in. wide, supported and enclosed upon all sides by brick walls not less than 9 in. thick, with arches turned under the landings, and a ceiling formed of fire-resisting materials, to be approved by the Board.

6. That a brick wall, not less than 9 in. thick, be built on the north side of the staircase to the upper circle, to separate such staircase from the wardrobe and saloon adjoining, and that the gallery at the head of the lower circle staircase be enclosed on all sides by fire-resisting materials to be approved by the Board, or be caged in by wrought-iron bars, 1 in. square, placed 6 in. apart.

7. That the subterranean tunnel under the pit be blocked up, and that the wooden staircases leading to the same be removed, and the flooring made good.

8. That a new entrance from the street, not less than 4 ft. 6 in. wide, enclosed on all sides with brickwork or other fire-resisting materials, to be approved by the Board, be provided to the pit-stalls on the west side of the theatre.

9. That a new entrance and staircase be provided to the gallery on the west side of the theatre; that such entrance be not less than 4 ft. 6 in. wide, and be enclosed upon all sides with brickwork or other fire-resisting materials to be approved by the Board, and that such staircase be of similar dimensions and construction to the staircase described in Requisition No. 4.

10. That the passage-way between the houses Nos. 57 and 58, Holywell-lane, be cleared of all obstructions, and be made available as a means of exit, and that the openings in the wall on the west side be stopped up with brickwork the full thickness of such wall, and that such passage-way be separated from the premises under and over by floors of fire-resisting materials to be approved by the Board.

11. That the carriage-way adjoining the North London Railway be cleared of all obstructions, and be made available as a means of exit; that the openings in the walls enclosing the same be bricked up; and that such carriage-way be separated from the premises over by a floor of fire-resisting materials, to be approved by the Board.

12. That the scene dock on the west side of the theatre be separated from the North London Railway premises adjoining, by brick walls not less than 9 in. thick, and that any openings formed in such walls be closed by wrought-iron doors similar in all respects to those described in Requisition No. 1, or by revolving iron shutters.

13. That the pit refreshment-bar and pay-box adjoining be removed.

14. That a clear space, 3 ft. 6 in. wide, be formed around every part of the orchestra-stalls, pit-stalls, and pit.

15. That a clear space, 3 ft. 6 in. wide, be formed around every part of the upper circle.

16. That a clear space, 3 ft. 6 in. wide, be formed around every part of the gallery; that the seats in the angles of the gallery be removed; and the flooring made good, and of one level throughout; and that two gangways, each 3 ft. 6 in. wide, with steps of easy rise, be formed in the gallery, with stout handrails at the lower end of each gangway next the gallery front.

17. That the doors in the side walls of the entrance corridors out of Shoreditch High-street be rehung so as not to obstruct the passage-way.

18. That the doors to the private boxes be rehung so as not to obstruct the gangway.

19. That stout handrails be fixed on both sides of all staircases, steps, and landings where not already provided.

20. That the skylights in the roofs be protected by stout iron wire-guards.

21. That all doorways used by the public be made 4 ft. 6 in. wide, and that the doors be hung in two folds, and be made to open outwards.

WHERE IS THE SANITARY INSPECTOR?

UNDER the head of "Working Experiences," a Sanitary Aid visitor contributes the following to the last number of the *Charity Organisation Reporter*:—

"We may give a few details of two other cases still worse than any yet described, and which were visited by the Sanitary Aid visitor only yesterday.

A description of them is indeed hardly possible. The house, it may be premised, is a six-roomed tenement, occupied by six families. On entering a very narrow passage, the first thing that strikes you is the filthy state of the walls, the broken ceilings, the missing banisters, the unglazed windows of the staircase, and the generally dilapidated state of the house. But it is the water and privy accommodation which is the feature of this case. In a small court, 12 ft. by 10 ft., on to which the back windows all open, the state of things is as follows:—

The one small cemented brick cistern which supplies the closet supplies also the only source of drinking-water for twelve families,—those of this house, that is, and of the next. It is about 3 ft. long by 1 ft. 6 in. broad, and lies directly over the closet, with a pipe running straight up from the closet into it. It is covered in at the top with a lean-to roof of broken tiles, through which the rain pours in, washing down into the drinking-water the thick coating of soot and blacks which encrust the tiles within and without. The closet itself is in such a state of disrepair as to be scarcely useable, and a large pool of soil soaks perpetually all over the floor and into the court, as well as round into the adjoining washhouse, where, close to the ground, is the one drinking-water tap which supplies the house. The stench is simply unbearable. Add to this an uncovered brick dust-bin, full of offensive matter, and a heap of old bones and vegetables decaying in a corner. How the tenants have escaped cholera and typhoid passes all understanding. Up-stairs in one room was a poor woman suffering from a diphtheritic sore-throat and pains in her limbs. On the next floor a man had been ill ten weeks with a bad rheumatic attack. Another man had been removed to the infirmary. The next house was, if possible, worse, for there the only drinking-water supply was taken from a tap at the back of the closet wall of the last house, and from the same polluted source. The only closet for this house was quite unuseable, and in a state beyond description, so that six families had absolutely no accommodation whatever. The cistern over it had no tap, and the water leaked down the wall with a slow drip, adding damp to the fearful smell which made these two back courts simply a potential fever nest. The visitor came away feeling perfectly ill from only standing long enough there to note defects; and the poor tenants have to live and bear it, and pay 4s. and 4s. 6d. for a single filthy room, while the landlord, often as he has been asked, declines to move. It may well be asked, What are the inspectors doing?"

Books in the British Museum.—An evening paper says that the latest return of the number of volumes in the British Museum is just over 1,300,000. There are 160 miles of shelves, and about twenty more miles to be filled.

ROMAN MORTAR AND THE ITALIAN METHOD OF TREATING LIME CEMENTS.

SIR,—It is stated, on p. 360 of your number for March 15, in speaking of the way in which the Romans used lime mortar, that the lime was generally burned on the spot, and used fresh before cooling and crystallisation set in. Was this really the case? The inquiry is not made by way of cavil at an interesting article, but as a necessary consequence of the comparison of the statement in question with a wide and definite personal experience.

In Southern Italy, at the present day, teh work of the mason and of the bricklayer is, as far as it is easy to ascertain, very closely what it was eighteen or nineteen centuries ago. Nor are the dates vague. Pompeii is an instance of indubitable Latin work, of which the latest, though not the earliest, date is certain. At Puteoli, again (or Pozzuoli, as it is now called), work of Roman date is extant. So it is at Capua,—speaking only of spots personally well known to the writer. Again, in the neighbourhood of Pompeii, skirting the romantic line of hills that form the southern bound of the beautiful bay of Naples, exists a tunnel aqueduct about 4 ft. high, now dry, but with a layer of sinter at the bottom that tells of its long continued use. It is held that it supplied Stabiæ and perhaps Pompeii with water. In these and other instances that may be cited, it may be said that it is literary testimony that establishes the antiquity of the work. As far as material goes, in substance, shape, size, and mode of construction the ancient work is indistinguishable from that of the local masons of the present day,—admirable workmen as they are. So again with regard to "the large size, flat and thin" Roman bricks, of which the article correctly says that they "may be termed tiles, though used for wall building." The use of *mattone*, as it is called, or brickwork, is rare in Southern Italy, as it is more costly than the ordinary tufa work. But it is at times employed,—and then the thin tile is used, precisely as in Roman times. These statements are not made second hand, or from a hasty tour, but are given from observations made during a residence of more than eight years in Italy, spent in close association with Italian architects.

The upshot of this investigation is, that the whole process of building, so far as can be judged from the comparison of ancient and modern work, being unaltered at least from the time of Pliny, it is fair to presume (in the absence of some very definite proof) that the treatment of lime for mortar is also unchanged. That treatment is the very reverse of being "used fresh." On the contrary, the Italian architects consider that the excellence of their mortar is in proportion to the length of time for which the lime has been slaked before using it.

On proceeding to commence a *palazzo* or other building, the first thing done is to dig a pit of size sufficient to contain the lime which it is anticipated that the building will require. This pit is then filled to within a foot or two of the surface with fresh lime, and the space left is filled with water. The water is, or ought to be, supplied as it evaporates, so as to keep the subjacent lime always in the state of a dense damp paste. It is dug out and mixed up as required, and if the first supply is exhausted more is added, but invariably treated in the same way, and the result is admirable. It is the opinion of persons competent to form conclusions of their own that the ease with which (in a climate that varies so extremely as to its hygrometric condition as does that of Italy, where the usually dry elastic air becomes painfully damp and clinging when the Sirocco blows over the Mediterranean) the walls of houses receive painting *al fresco*, is due to the mode of preparing the mortar; and this is all the more worthy of note because, if such be the case, it may be inferred that the grim and grievous failures which are but too well known in attempts at *fresco* painting in England, are due, not to our English climate, but to "daubing the wall with untempered mortar."

If it be asked for further testimony as to a method universally in use, at all events in Southern Italy, the inquirer may be referred to a paper on the limes and cements of Casale, Piedmont, and Liguria which is to be found in volume xv. of the Italian scientific journal, the *Giornale del Genio Civile*. In 1846 the Italian Government instructed Signor G. Signorile to examine the limestones of the above-named districts with reference to their use on railways. It had been found that the lime which had been excellent so long as it was calcined with wood, deliquesced when calcined with coal, the coal in question containing pyrites. The experience of thirty years led to the conclusion that, for hydraulic lime, perfect calcination has to be effected in kilns of the ordinary construction, heated with wood, and fed from above. The tempering should be effected with the least quantity of water required to effect a stiff argillaceous consistency similar to that required for making bricks when tempered. The lime, the report goes on, should be kept under water, the temperature of which should be between 51° and 70° Fahrenheit, a necessary precaution in the case of experiments some of which lasted from six to twelve months or even more.

It is unnecessary to go into the details of these experiments. Every variety of limestone received attention, and one of the remarkable features of the case was the difference in the quality of the limestones from different beds in the same quarry. But in most cases the slaking was troublesome, as the limes increase in bulk but little when slaked, and, at certain temperatures, commence to soften before removal from the furnace. In these cases the change continues to go on very slowly, so that efflorescence takes place after use in building. It is to avoid chemical changes of this nature that the long process of slaking under a small head of water has in all probability been adopted.

In our own use of lime mixed when hot two inconveniences occur. It is, as we have seen, in order to avoid these inconveniences that the preliminary change in the lime, due to slaking, is made to occupy as long a time, and thus to proceed as slowly as possible, by the Italians. Without affecting too much precision of language, we may briefly characterise the evils to which we refer as being the one physical and the other chemical. That is to say, we have to contend with swelling and with deliquescence. As to the swelling, it is perhaps not so easy to speak positively in the case of the thin beds of mortar which are commonly used in brickwork. But in concrete the change of bulk is very perceptible. In new brickwork, again, the effect of deliquescence is most painfully apparent. Mr. Robertson, the author of a paper entitled "An Investigation into the Theory and Practice of Hydraulic Mortar," which was read before the Institution of Civil Engineers on 13th April, 1858, said that concrete had a tendency to swell when made of quick lime. He had tried the experiment and found that the swelling differed in extent in winter and summer. In summer, in a cubic foot, the concrete would swell one thirty-second in bulk; in winter only one forty-eighth. A paper on this subject, by Mr. Burnell, was read at the Royal Institute of British Architects in the session 1857-58, in which the use of quick lime in concrete was strongly condemned. When the extension of the London and Birmingham Railway from Camden Town to Euston was made, a layer of some 2 ft. 6 in. of concrete was placed in the foundations of the retaining walls. When the footings had been laid on this, and the plinths carrried up a few courses, an iron bench mark was driven in at each pilaster. As the work was of an important nature, great care was taken with these levels, which were read, with a powerful instrument, to the 200th part of a foot, being double the usual degree of accuracy. Time after time, however, on checking the levels after three or four days, they proved wrong. The matter perplexed the resident engineer greatly, until it was found that the error was due to the swelling of the concrete, which lifted the retaining wall built on it. On going back over the whole series of pilasters, the differences were found to be correct, although there was a general rise of level above the bench mark from which the levels were started. Again, it was stated in the paper above quoted, that after grinding mortar for one hour, keeping it always at the same stiffness, it was observed with surprise that the quantity, instead of wasting, was absolutely beginning to swell, notwithstanding that the lime had been thoroughly slaked, and no increase of bulk from that cause was possible. A number of measurements are added to show that mortar arrives at its greatest density after one hour's grinding; and that when the grinding was carried on for ten hours,

the mortar lost half its strength, and gained 14 per cent. in bulk. The strong adhesion existing between cement and limestones, especially oolites, has led to the idea, suggested by Mr. Burnell, that carbonic acid is absorbed by the cement from the stone itself. This view was supported by the experiments of Mr. Robertson, who also distinguishes between the hardness acquired by the mortar in the process of setting, and the further induration due to lapse of time.

Mr. Rendel's practice, it was mentioned in the debate, resulted in the rule to slack hydraulic lime with 33 per cent. of water, and to keep it for ten days. Roman and other ancient mortars, Mr. Robertson observes, owe much of their excellence to the slow absorption of acid; and it is, he adds, "unreasonable to suppose that the mortar of modern engineers will prove inferior to those, as it is undeniable that the theory is much better understood now." The nature of chemical action is, no doubt, better known now than could be the case before the time of Dalton. But that is quite a different thing from saying that we know better how to make mortar. Nor is it so certain that Time could do so much, unless the start be made in the right way. In some old buildings the mortar is in a very disintegrated condition, while in others it has consolidated into something like a geological rock. It is, at all events, conceivable that the bad mortar was hot slaked, and that the consolidated mortar, as in the case of Roman relics in Italy, and even in England, owes its existence to the new process of the Italian mortar-makers.

At all events, it is clear from the above-cited authorities, that not a few points ordinarily neglected have very great influence on the excellence of mortar. The character of the limestone used has, in the first place, of course to be regarded. But good lime can be made from so many various kinds of limestone, that the greatest care in selecting, not only the quarry, but the bed of the quarry, is only one element of the supervision to be exercised by the architect.

Next, attention has to be called to the mode of calcination, and in this it is clear, from the experiments of Signor Signorile, we have to regard not only the kiln, and the mode of firing, but the fuel. Has this been regarded aright with us? To say nothing of wood, is it not the cheapest and thus the least pure coal that is ordinarily employed by the lime-burner? That the excess of sulphur thus rendered possible may be fatal to the excellence of the mortar is not only a theoretic possibility, but, in some cases at least, an established fact.

Then comes the question of slaking, which it is not, perhaps, easy to distinguish from that of grinding. In the case cited, where the continuance of the latter process for ten hours exercised an injurious effect upon the mortar, it is probable that hot slaked lime was used. The experiment thus tells nothing as to the degrees of comminution or of mixing that may be desirable with slowly-slaked lime. As to this, Italian practice and Italian theory are at one. Nor does there seem to be anything irrational in the idea that undue haste in the commencement of a series of chemical processes which are to extend, not only over days, but over years, may be pernicious. To set a brick or a stone in a bed of mortar, and to leave the result to time, is all very well. But even Time himself demands fair-play, if he is to be a consolidator rather than a destroyer. A difference has been pointed out between the two processes of "setting" and of indurating, although one of these passes, or ought to pass, insensibly into the other. It is conceivable that the rapidity with which the slaking process has been effected, or the short time given to the slaked lime in which to accommodate itself to its new chemical condition, before it is called upon to enter on a new series of combinations, may have much to do with its subsequent behaviour. Such, at all events, is the opinion, and such is the practice, of the most ancient and most famous school (save one) of European architecture. Is not this worth the serious attention of the British architect?

It is suggested that it would be well worthy the reputation of the Royal Institute of British Architects to encourage a thorough and systematic investigation of the subject. Materials exist for forming an opinion. Some of them are above indicated, and their investigation will open the way to yet further facts. It can hardly be said that our knowledge of the practical chemistry of mortars is absolute. It is, perhaps, unnecessary to illustrate this fact. It is certain that the manner in which mortar is used by the Italian builder is very different from that common with ourselves. Is it a difficult matter with us to take up a few courses of newly-set brickwork? When does the adhesion become so perfect that the brick will yield before the mortar? In Italian building adhesion is much more rapid and complete. No doubt much is often due to the presence of that admirable material *pozzuolana*. But this, though a common and valuable, is not a universal, element in Italian mortar. In many cases where hasty building is desirable, as after partial demolition from earthquake, lime taken from such pits as have been described is used pure, or nearly so. It is better not to speak without citing chapter and verse as to the exact proportion of *pozzuolana*, sand, or other materials mixed by the Italian builders with their lime. The proportions differ, from the rudest kind of masonry, —which is used in Italy where in England we use wood, as in forming the centre for an arch,— to the finest *scagliola*, or the impervious mortar which forms the flat roofs of so many important buildings, a mortar which is beaten with heavy clubs for ten days or a fortnight incessantly, in order to consolidate it. In the *scagliola* with which the interior of churches is often adorned, and in the "*battuto*" work of the terraced roofs, we have examples of the use of lime cements of a nature quite unknown in this country. The plaster of a modern English villa is usually perishable. Not so with these Italian applications of mixtures, alike, or very closely so, in ingredients, but wonderfully different in mode of manipulation from our own lime cements and plasters. What would our English builder think if he was obliged to detail four men to beat a roof or a floor for ten days or a fortnight? But this is an essential part of the erection of a good palace in Southern Italy; and woe to the ears of the neighbours while it goes on! The noise of the beating is bad enough, hour after hour. The men usually sit on very low rush-bottomed chairs, and use a wooden club some 3 ft. long, and 4 in. or 5 in. square, with a bent handle A perpetual hammering from three or four of these implements is bad enough; but it is nothing to the fearful howls with which the work is usually accompanied. Evil will be the memory of any one who should introduce into England such an addition to the noises of our cities! But that notwithstanding, the results produced by the Italian treatment of lime are so incontrovertibly superior to those common in England, that it is hard to exaggerate the importance of a thorough investigation of the subject. F. R. C.

March 19th, 1884.

THE "R.I.B.A."

SIR,—I was very glad to see that in your "Notes" of last week you condemned the attempt of some (so far) nameless persons to form an opposition society to the Institute, and I feel sure all the thinking and sensible members will fully endorse such condemnation.

Referring to the letter from Mr. Aitchison, I quite agree that what should be aimed at is to take every possible measure to get those who "now stand aloof to enrol themselves," and thus make the Institute not only a corporate body, but a really thoroughly *representative* one.

The letter from Mr. McLachlan [p. 424, *ante*], I think, is one which deserves the thanks of the members, as it brings before them facts which probably were either unknown or forgotten by many, more especially the extracts from the reports of the Council in 1837 and 1849.

I cannot think that any good reason *can* be given for not giving so large a body as the Associates now are a vote, or at any rate a proportionate one. I apprehend that the only difficulty would be the alteration of the charter, and, as Mr. McLachlan shows, this requires alteration on more points than one.

Were this done, there would be a good hope of making the Institute what all must agree it should be, a thoroughly representative body.

I hope that all members will take the present opportunity of showing what I am convinced they feel, by expressing their views, and so show the Council what their "constituency" wishes, and I feel confident that if this be done the Council will not only "consider" the matter, but will be induced to bring forward a scheme which would meet the much-needed reform. G. A. PRYCE CUXSON.

MECHANICAL AIDS TO SCULPTURE.

SIR,—As this subject seems to have attracted some interest, will you allow me to add something to my former letter? Referring to the remark of Mr. George Simonds in your issue of March 1st (p. 320), that the sculpturing machine invented by Watt was abandoned by him, I think if he will inquire he will find this is hardly so, as, in the first place, Watt used the machine simply for his own amusement, and both the machine and some of the busts and bas-reliefs produced are still to be seen.

No one will deny that to make a successful sculpturing machine certain mechanical difficulties have to be surmounted; but, given time and unlimited money to work it out, I am one of those that believe almost any process may be imitated by mechanical means. Although there may be considerable difference of opinion, —in an art sense at any rate,—as to the advisability of reducing sculpture, when possible, to a mechanical process, much can be said on the other side as to the gain occasioned, in the art-education of the masses, by the reproduction by mechanical means of standard examples at a nominal cost; or, at any rate, by allowing machinery to do all the rough work, leaving the artist to give the finishing touches, and endow the bust or statue with "artistic merit."

The best known machinery designed for carving and sculpturing is that patented by Mr. Jordan, of London, in 1845, and a variety of machines, based on this patent, have since been constructed. It was designed for carving and copying irregular forms in wood or stone; the material to be shaped, and the model, were fixed on a horizontal table running on wheels transversely on another table or frame, which was arranged to move in a longitudinal direction, so that by the straight-line movement in two directions the table could be made to have a motion in every part of its iron plane.

The model and material to be shaped were made to swivel on centres, and so arranged that by means of a lever each could be turned simultaneously on its axis. The cutters were carried on a vertical slide; this vertical slide was raised or lowered to the work, which was fixed on the travelling table beneath by means of a treadle. A tracer guide acting on the model produced, by the aid of the cutters, facsimiles in the piece or pieces of material. Referring to stoneworking machinery generally, which, owing to ever-increasing competition in building construction, is now beginning to attract the attention it deserves, I can show those interested a machine that will cut architrave mouldings, cornices, ovolos, pilasters, astragals, ogees, scotias, strings, and other straight and curved undercut mouldings, panels, recesses, &c., and finish them in every way superior to, and at an immense saving over, hand labour. M. POWIS BALE.

ANCIENT LIGHTS.

SIR,—I have been reading Mr. Banister Fletcher's book on ancient lights, and am struck with the following two cases, which, although so much alike, have received opposite decisions. Can you or any of your correspondents explain the same?

The first case, p. 16, of his book is:—

A has two plots, *b* and *c*. He sells *b* to B, who puts windows in his house overlooking *c*. Subsequently he sells *c* to C. C blocks up B.'s windows. Judge rules that C has no right to block up B.'s windows.

The other case, p. 18, is:—

A possesses two plots, *b* and *c*, and sells *b* to B and *c* to C. *c* has windows overlooking *b*. C contends that although his windows are not ancient, yet that A expressly or impliedly reserved these lights when A sold *b* to B. The judge ruled that C was not entitled to an injunction against B when B blocked up C.'s windows. IGNORANS.

COMPETITIONS MEMORIAL COMMITTEE.

SIR,—May we, through the medium of your paper, request all who subscribed to the Street Memorial, and all other architects desirous of aiding reform in the principle then advocated, to sign the form sent to them and return it to us at their earliest convenience?

Over 1,000 signatures have been received to date.

COLE A. ADAMS, } Hon. Secs.
ASTON WEBB, }

14, *Holden-terrace, Grosvenor-gardens, London, S. W.*, March 27th.

SMOKE ABATEMENT.

SIR,—I shall be glad if you will allow me to notice Mr. Edwards's letter under above heading, only to point out that the statements and charges he makes against the Smoke Abatement Committee's tests were refuted in the *Builder* of the 24th and 27th of March, 1883, as well as in the other journals to which he wrote.

Mr. Edwards's object in writing at that time was evidently an endeavour to invalidate the tests generally, because his own grate failed in the competition with grates of all sizes, tested under precisely similar conditions to his own. The statements he then made were proved to be absolutely incorrect, and his reasoning to be fallacious. He now appears disposed to renew the endeavour, and to his former improper treatment of the matter he now adds the disingenuousness of omitting to inform the public that he is the inventor of the grate he recommends, and he puts forward the name of Messrs. Benham & Sons, who make his grates, instead of his own. This seems to be treating both your readers and yourself with such bad faith, that it may perhaps be usefully exposed.

W. R. E. COLES.

National Smoke Abatement Institution,
44, Berners-street, W., March 25.

ASYLUM COMPETITIONS.

SIR,—Allow me to state, in answer to "A.R.I.B.A.'s" letter in your number of the 22nd inst., that the competition to which he refers was arranged in two series, according to what appeared to be the prevailing opinion as to competitions, as expressed at the meetings of the Institute.

As to the design of the successful competitor I reported that, although it carried out the detailed requirements of the Commissioners generally, yet that in an important point it would have to be altered before it received their sanction.

The same observation would have applied with greater force to the other designs submitted, although many of them showed great care and talent.

In my report I pointed out the chief causes of failure.

THE ASSESSOR.

March 25, 1884.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

SIR,—As an old subscriber to your paper, which is always open to ventilate grievances, and also as a loyal member of the Institute, I ask you to draw the attention of the Council and the profession to what I consider a serious grievance and monopoly sought to be enjoyed by the Fellows only. This opinion I may say is shared by many of the profession with me. I refer to the "Conditions of Contract prepared by the London Builders' Society on the basis of headings sanctioned by the Royal Institute of British Architects." Clause 20, page 3, is the reference clause, and it winds up:—

"Architect, or in the event of his unwillingness to act, then of . . . . architect, or in the event of his death or unwillingness to act, then of an architect being a Fellow of the Royal Institute of British Architects," &c.

There is a footnote that "the Council of the Royal Institute of British Architects require that the blank should be filled in with the name of a Fellow of the Institute."

Considering that there are in London and neighbourhood 236 Fellows on the list of members, and 457 Associates, and some of the latter, being men of large and varied experience, who probably do not aspire to anything more than being Associate members, and also that there are among the Associates a considerable number of gentlemen practising as quantity surveyors, it seems most unreasonable and unjust that the Council should debar Associates from taking references (where their form is adhered to it precludes them) in cases of small disputes; where knowledge of measuring and prices is indispensable, it is only reasonable that the surveyor should be the referee in preference to the architect. Moreover, if referred to a Fellow, it increases the cost of a reference twofold:—1st, the charges made by a Fellow on reference would be more than those charged by an Associate; and 2ndly, in many cases the Fellow would have to call in a measuring assessor; whereas, if an Associate acted, probably he would determine, by measuring himself, any differences.

The builders in London probably receive considerably more work in the aggregate from the 457 Associates than they do from the 236 Fellows. Many of the latter do not practise.

The consequence of this is that a considerable number of Associates and others in their conditions of contract put in clauses, leaving it open to select any architect or surveyor that may be agreed upon; or, in many cases, each party nominates one arbitrator, and the two arbitrators select an umpire, independently of any connexion with the Institute. In some cases I have seen a member of the Institution of Surveyors inserted in the contract. This injures the *prestige* of the Institute, and takes away one of the privileges of being a member.

I have this day received a balloting list with twenty-two names, of which fifteen are to be chosen for the Council. What it is sent to me for I am at a loss to understand; as, on the other side, the first two lines distinctly say that Associates have no right to vote, or in any way to interfere, with the affairs of the society. I presume, therefore, the balloting-paper is useless to Associates. All I can understand that Associates can do is to attend meetings, read Transactions, and pay their subscriptions.

The number of Fellows is 408, and 685 Associates. Therefore, considering how much greater the latter number preponderates, surely the Associates should have some voice in the management of the society to which they so largely subscribe.

I write this in no captious spirit of opposition (and know personally of no opposition society), but merely to call attention to matters which, now the election of a new Council is coming on, may probably induce them to offer some further privileges to Associates, and thus secure their increased loyalty and support,—"L'union fait la force."

A.R.I.B.A.

"A WOULD-BE ACADEMY STUDENT'S DIFFICULTIES."

SIR,—In answer to "Improbatus's" letter [p. 426, *ante*], asking for information respecting the drawings required for Probationership at the Royal Academy, members of the Architectural Association can borrow from its lending library Letarouilly's "Palaces of Rome" (which work has been sub-divided for the purpose into four or five parts, each with an important palace in it), Sharpe's "Parallels" (which has been similarly sub-divided), Pugin's "Examples," Pugin's "Specimens," and numerous other works, leaving an ample choice to the would-be Probationer. If not a member of the Association, in one or other of the professional journals have been published from time to time numerous examples of measured drawings which have obtained medals at the Royal Academy or the Institute. The past publications of these journals can be inspected in the Library of the South Kensington Museum, the date of issue noted, and the back number of the journal purchased. The published plates are sufficiently clear to allow of their being enlarged; and, notwithstanding "Improbatus" being "*convinced*" otherwise, it is better to select ancient rather than modern examples of architectural design. The latter, however, are by no means disqualified, as evidenced by the fact that portions of the New Law Courts have been more than once sent in, copied from the published prints.

It is unfortunate that "Improbatus's" remarks were not confined to the above inquiries; his description of his reception by me is inaccurate. I do not snub those who are unfortunate enough to fail in being admitted. I am especially careful to avoid hurting their feelings or disheartening them from a further trial. It is no part of my duty to advise them at all, and I do so unofficially. In the instance referred to I fancy from the description that I must have advised "Improbatus" to obtain a copy of Sir Charles Barry's "Travellers' Club House in Pall Mall," edited by W. H. Leeds, a book costing a few shillings, and which I recommend to those who prefer Classic or Italian work. If I am right in this assumption, and "Improbatus" having copied the drawings therein contained, is unable to "help thinking that the fact of their being embodiments of a taste long since decayed," contributed to his failure, I am afraid he is mistaken; and it seems more likely that his want of success was due to his inability to recognise the beauty of proportion and refinement of detail of the building he was attempting to copy.

R. PHENÉ SPIERS,
Master of the Architectural School
of the Royal Academy.

WHAT'S O'CLOCK?

SIR,—About thirty years ago the Society of Arts gave 100*l.* premium for a shilling box of water-colours. This measure led to a complete revolution in art stationery, the good results of which are unbounded. I would suggest now that the same society give a similar premium for the best domestic clock that can be made and sold for 1*l.* A striking clock, of course. There is no medium of English make between a most expensive instrument and some eighteenpenny rubbish that loses or gains three hours a day, and finds its way to the dust-hole in about three weeks. German and American articles, after extinguishing the home trade, have fallen off considerably, and I hope the Society will give their serious consideration to this important subject, which would have the effect of reviving a most profitable and useful industry, and make it once more possible to answer the question at the head of this article.

WALTER SCARGILL.

THE VENTILATION OF THEATRES.

SIR,—As some interest was excited in this matter by Mr. J. P. Seddon's paper a short time back, [pp. 225, 282, *ante*] it may be worth while to recall the fact that, thirty to forty years since, the Haymarket Theatre, then under the management of the late Mr. Benjamin Webster, was warmed and ventilated by the late Mr. J. Sylvester, C.E., of Great Russell-street, Bloomsbury. As I was in the employ of Mr. Sylvester at the time, and partly superintended the execution of the work, I have a pretty good recollection of all the circumstances.

The heating (hot-water) apparatus was placed under the pit, and the warmed air distributed by numerous flues to all parts of the house; the ventilation was effected by the opening over the centre chandelier, which was covered, above the roof, with a louvred shaft in which was fixed a semi-cylindrical revolving shield, with a vane on the top to keep the open side to leeward. I forget the sectional area of this ventilating-shaft, but recollect perfectly that it was considered essential that the area of the fresh-air inlet should be largely in excess, so that no sensation of draught should be experienced.

When the works were completed, one of the contractor's labourers was employed to manage it, and I personally watched the effect almost nightly for several weeks after, during which time very few complaints were made.

Some time after, however, possibly in the following season,—I am not quite clear as to this,—complaints were made to Mr. Sylvester that the heating apparatus did not warm the house, and that in consequence the external openings for the admission of fresh air had been closed, necessarily destroying the ventilation. I was sent to inquire into the cause of this, and found that the man left in charge had been dismissed to save expense, and that one or another of the regular staff was supposed to attend to the fire, the result being that, as it was nobody's business, it was entirely neglected. On reporting this state of things to the then treasurer, who also called himself a civil engineer, I was met with such a torrent of vulgar abuse, that I left the house, and have never been in it but once since.

It may be that theatrical managers are now more anxious to provide for the comfort of their patrons, but certainly my experience was not encouraging.

C. P.

RAILWAYS.

SIR,—What is meant by a "mile" of railway in the comparison table of your interesting article on M. Picard's book (p. 397, *ante*)? Are single lines and lines of four ways, six ways, and more, all reduced for comparison to line of double way? H.

*** In both the French and the English railway returns the mileage is stated per mile of line open, irrespective of the number of tracks.

A CLAIM FOR "EXTRAS."

BRUNSDEN *v.* STAINES LOCAL BOARD.

IN this case (tried before Mr. Justice Mathew) the contractor made a claim for certain extras. The architect of the Staines Town-hall, Mr. John Johnson, certified the amount which he considered to be due, and the builder presented the certificate and obtained a cheque. Some months after he brought an action for the amount of the items which the architect had struck out, and the learned judge gave his decision in favour of the defendants.

Mr. Sargeant, of Westminster, measured for the builder; and Mr. Henry Lovegrove for the Local Board.

PROVINCIAL NEWS.

Cardiff.—The first sod of the Llanishen Reservoir of the new Waterworks extension was cut on the 14th inst. by the Mayor of Cardiff (Mr. Bird) with a silver spade presented to him by the engineer. The storage reservoir, which is situated four miles from Cardiff, and will be capable of holding 300,000,000 gallons of water, is part of an extensive scheme for supplying Cardiff with water direct from Taff Fawr on the Brecon Beacons. The total cost of the undertaking is estimated at 300,000*l.*, and includes a 24-inch gravitating main from Taff Fawr to Llanishen, the construction of compensation reservoirs on the line of route, and the storage reservoir at Llanishen. The works were designed by Mr. J. A. B. Williams, A.M.I.C.E., of Cardiff. The contract for the Llanishen Reservoir is let to Messrs. Hill Bros., of Beckenham, for 53,000*l.*; the contractors' engineer is Mr. J. C. Dudley, and the clerk of the works is Mr. J. T. Jones.

Cambridge.—The memorial-stone of a Working Mens' Institute, at Castle-end, Cambridge, was laid on the 6th inst. by Professor Stuart, of Trinity College. The building will be in the English Domestic style of architecture, with

mullioned windows and a high-pitched, open-timbered roof, covered with Bangor slate. There will be two class-rooms at the north end. The scullery, soup-kitchen, and lavatories will be on the west side. The whole is faced with red Suffolk bricks, relieved by Bath stone dressings. The cost will be between 600*l.* and 700*l.*, exclusive of furniture. Mr. Henry George Bishop, Cambridge, is the architect, and Mr. G. J. Newman is the builder.

Darlaston. — Mr. John Thornhill Harrison, C.E., Inspector of the Local Government Board, has been holding an inquiry at the Local Board Room, Darlaston, into the merits of an application made by the Local Board for sanction to a loan of £22,500 for sewerage and works of sewage disposal. The Clerk explained to the Inspector the grounds of the application. The Board sought to borrow £22,500, but, having regard to the fact that a portion of the land had been dispensed with, the amount *pro ratâ* could be reduced, so that it would not be necessary to borrow the actual sum. The reasons for this application were apparent. Unfortunately, Darlaston had been without a system of internal sewers; the only sewers they had were incompetent to deal with the present sewage; and another reason which had induced the Board to seek a road out of the difficulty in which they were placed was the fact that proceedings had been threatened by the Birmingham Corporation, and also by Messrs. Elwell, who claimed certain water rights in connection with the stream. But the Board hoped and believed that the scheme which was submitted on their behalf by Mr. E. Pritchard, of Birmingham, would meet with the approval of the Local Government Board, and would satisfy all parties who felt themselves aggrieved; and also discharge in every possible way the legal statutory obligations. The scheme included the sewering of the town, and outfall works in Bentley-lane, near James Bridge. The items of cost were:—Sewerage works, 18,555*l.*; cost of land, 1,291*l.* 11s. 3d.; compensations, legal and other expenses, 1,850*l.* 8s. 9d.; making a total of 22,500*l.*, the whole of which the Board believed would not be expended. The population of the town was 13,900, the rateable value 22,300*l.* 4s., and the loan debt only 400*l.* Subsequently, Mr. Pritchard described the details of the plans which he has prepared, and the inquiry terminated.

BUILDING PATENT RECORD.*

APPLICATIONS FOR LETTERS PATENT.

March 14.—4,856, W. R. Cornell, Grays, Ornamentation of Bricks, Blocks, &c.—4,866, A. F. Garrood, London, Safety Ventilating Sash-fastener.—4,871, J. Telford and R. Philpott, Liverpool, Window-sashes.—4,900, S. Chandler and J. Chandler, Ventilating Chimneys.—4,903, J. Monro, New Barnet, Glazed Shelter Wall and Frame.

March 15.—4,934, R. Adams, London, Window-sashes.—4,948, C. Cooper, London, Heating Baths, Conservatories, &c.—4,950, J. D. Garrett, Southwold, Earth Closets.

March 17.—4,978, P. O'Connor, Wavertree, Spring Hinges.—4,997, T. Clayton, Ashton-on-Mersey, Ventilation.—5,014, A. J. Boult, London, Venetian Blinds. Com. by J. Querre, Toulouse.

March 18.—5,049, E. W. Harcourt, Nuneham Park, Chimney-cowl.—5,057, A. E. Gearey, Manchester, Wooden Block Flooring, &c.—5,064, W. J. Ticklepenny, London, Fireproof Floors and Ceilings.—5,072, W. S. Rosenthal, London, Eyes for stair-rods, curtain-poles, &c.—5,075, H. J. Haddan, London, Construction of Floors and Ceilings. Com. by F. L. Perrière, Paris.

March 19.—5,106, T. Caink, Leigh, Flushing Water-closets, &c.—5,108, B. Boothroyd and J. Doherty, Southport, Sun Blinds.—5,151, J. Sewell, Knaresborough, Glass Roofing.—5,162, M. Merichenski, London, Holders for Stair-rods, &c.

March 20.—5,172, J. Watson, Torquay, Warming and Ventilation.—5,184, C. H. Wood, Sheffield, Window-sashes.—5,194, H. Hart, Ballymacarron, Bricks.—5,205, J. M. Tall, London, Building in Concrete.—5,211, J. C. Bothams, Fisherton-Anger, Construction of Walls with Louvre Openings, &c.—5,212, S. Belham and J. D. Belham, London, Fireplaces, Flues, and Chimney-tops.—5,222, J. C. Bothams, Fisherton-Anger, Chimney-tops.

SPECIFICATIONS ACCEPTED.†

March 21.—1,715, R. Stevens, Bromley, Three-bar System of Glazing.—1,852, W. Harding, Exeter, Glazing Greenhouses, &c.—3,457, J. Fraser, Arbroath, Astragals.—3,559, A. Waters, Croydon, Cistern Float-valves.—4,438, J. Miller, Glasgow, Ventilating Syphon Traps.

* Compiled by Hart & Co., Patent Agents, 186, Fleet-street.

† Open to public inspection for two months from the date named.

NOTICES TO PROCEED

Have been given on the Dates first named.

March 18.—5,391, J. Warhurst, London, Apparatus for excluding Draughts, Rain, or Dust from Hinged Doors, &c. (Nov. 15, '83).

March 21.—5,438, T. E. Bladon and W. Matthews, Birmingham, Ventilation (Nov. 17, '83).

ABRIDGMENTS OF SPECIFICATIONS

Published during the Week ending March 22, 1884.

3,379, G. Maw, Broseley, Earthenware or Porcelain Tiles (July 7, '83, price 2d.).

The surface of the tile has designs engraved or cut upon it. (*Pro. Pro.*)

3,656, W. B. G. Bennett, Portswood, Automatic Flushing Apparatus (July 25, '83, 2d.).

A float is pivoted in the tank at the desired level, and is counterbalanced, and to the lighter end is attached the discharge-valve. As the water rises in the tank the float is made to assume a horizontal position, closing the valve. A ball-valve then fills the larger end of the float and sinks it, whereby the valve is opened and the flush is effected. (*Pro. Pro.*)

3,661, E. Jordan, Cardiff, Street or other Gratings (July 26, '83, 2d.).

The gratings are locked. (*Pro. Pro.*)

3,675, R. Martinez, New York, U.S.A., Mats or Floor Coverings (July 27, '83, 8d.).

These are made of slabs of wood joined together by vulcanised indiarubber, which also surrounds each slab.

3,685, W. A. Bonella, London, Fastenings for Folding-doors, &c. (July 27, '83, 6d.).

A tongue-piece is pivoted on the middle of the frame, and recesses are made in the meeting edges of the two doors, so that when one door is shut the act of shutting the other forces the tongue behind a plate in the first door, securing it thereby.

3,701, J. Davies, Llanfyllin, Chimneys, &c. (July 28, '83, 2d.).

In the chimney are mounted a series of fans, which will be caused by the draught to revolve slowly at first, and afterwards increasing their speed as the draught increases. (*Pro. Pro.*)

3,716, H. Pataky, Berlin, Roof-covering (July 30, '83, 2d.).

A mortar is made of vegetable filaments, coal-ashes, and coal tar, mixed together with water, and the roof is coated with this. (*Pro. Pro.*)

3,718, B. D. Healey, Brighouse, Asphalte Apparatus (July 30, '83, 2d.).

This is an improvement on patents Nos. 2,733 of 1876, 4,297 of 1881, and 3,783 of 1882, in dispensing with the gauges therein mentioned. (*Pro. Pro.*)

3,740, T. W. Helliwell, Brighouse, Water-closets (July 31, '83, 6d.).

To prevent noxious gases returning to the closet-basin, a chamber is formed where the fall-pipe enters the main discharge-pipe, and the entrance to this chamber and the exit therefrom are closed by hinged flaps, which can be lifted by the flush and afterwards close themselves. A ventilating-pipe is also attached to this chamber. The pipes are made in two parts lengthwise and then joined together.

3,754, C. M. Tate, London, Ventilating, Heating, or Cooling the Atmosphere of Rooms, Houses, and Buildings (July 31, '83, 2d.).

Below the bend of an inverted syphon is a lamp, or ice, &c., as the air is to be heated or cooled, and the syphon is connected with the room, &c. and the external air, the circulation being effected by the heat or cold. (*Pro. Pro.*)

3,760, F. J. Austin, London, Automatic Flushing and Antiseptic Tank (Aug. 1, '83, 6d.).

The cistern is filled by a ball-cock in a certain settled time, and emptied by a syphon. Above the cistern is a tank for the disinfecting fluid, and a ball-valve in the centre of the bottom thereof is lifted by the rising of the water in the cistern, when a small portion of the fluid is discharged.

3,761, T. Griffith, Manchester, Stair-pads (Aug. 1, '83, 2d.).

The treads of the stairs are covered with thick felt placed under the carpet, to preserve the same.

MEETINGS.

SATURDAY, MARCH 29.

Building Exhibition, Agricultural Hall. 10 to 10.
Royal Institution.—Captain Abney, R.E., F.R.S., on "Photographic Action considered as the Work of Radiation." (V.) 3 p.m.

MONDAY, MARCH 31.

Building Exhibition, Agricultural Hall. 10 to 10.
Surveyors' Institution.—Students' Proficiency Examination commences.
Society of Arts.—Professor W. Chandler Roberts, F.R.S., on "The Alloys used for Coinage." (Cantor Lecture.) 8 p.m.

TUESDAY, APRIL 1.

Building Exhibition, Agricultural Hall. 10 to 10.
Surveyors' Institution.—Students' Examination continued, and Associates' and Fellows' Voluntary Examinations in Divs. II., III., IV., and V. (continued till Saturday, April 5).
Institution of Civil Engineers.—Mr. William Foster, F.C.S., on "Experiments on the Composition and Destructive Distillation of Coal." 8 p.m.
Society of Biblical Archæology.—(1) Dr. Chotzner on "The Life and Social Position of the Hebrew Women in Biblical times." (2) The Rev. A. Löwy on "Technological Terms (Hebraic and non-Hebraic) marking the progress of Ancient Culture." 8 p.m.
Society of Arts (Foreign and Colonial Section).—Mr. Robert Capper on "The Rivers Congo and Niger as Entrances to Mid-Africa." 8 p.m.

WEDNESDAY, APRIL 2.

Building Exhibition, Agricultural Hall. 10 to 10.
Society of Arts.—Mr. Elijah Hoole on "The Dwellings of the Poor of Great Cities." 8 p.m.
British Archæological Association.—The Rev. S. M. Mayhew, M.A., on "Tenby and the Cathedral of St. David's." 8 p.m.
Geological Society.—8 p.m.

THURSDAY, APRIL 3.

Building Exhibition, Agricultural Hall. 10 to 10.
Society of Antiquaries.—(1) The Rev. H. M. Scarth on "The Discovery of a Vault with Heraldic Tiles on the site of Mynchin Barrow Priory." (2) Dr. C. S Perceval on "Some Deeds in the possession of Mr. A. T. Everett." 8.30 p.m.
Institution of Civil Engineers (Special Meeting).—Capt. Andrew Noble, C.B., on the "Heat Action of Explosives." 8 p.m.
Royal Archæological Institute.—(1) Mr. J. Park Harrison on "Saxon and other early Sundials." (2) Mr. W. Vincent on "The Church of St. Michael at Pleas, Norwich, and its Monumental Inscriptions." 4 p.m.
Society of Engineers.—Mr. J. W. Wilson on "The Construction of the Exhibition Building of 1851, and of the Crystal Palace." 7·30 p.m.
Chemical Society.—8
Royal Institution.—Professor Tyndall on "The Older Electricity: its Phenomena and Investigators." (VI.) 3 p.m.

FRIDAY, APRIL 4.

Building Exhibition, Agricultural Hall. 10 to 10.
Royal Institution.—Professor T. G. Bonney, F.R.S., on "The Building of the Alps." 9 p.m.

SATURDAY, APRIL 5.

Building Exhibition, Agricultural Hall. (Last Day). 10 to 10.
Architectural Association.—Visit to the Hampstead Congregational Church (Mr. A. Waterhouse, A.R.A., architect). 3 p.m.

Miscellanea.

Building Improvements in Chancery-lane.—The Enrolment Offices on the west side of Chancery-lane, near the Holborn end, are at present undergoing reconstruction. The interior of the buildings is being completely rearranged, and for this purpose the walls dividing the several offices have to a great extent been taken down. Another story is likewise being added to the building. The alterations are being carried out by the Office of Works. On the opposite side of the lane extensive additions have for some months been in progress to the recently-erected blocks of buildings known as the Victoria and Courts of Justice Chambers, and these additional ranges are now almost finished, giving a frontage to Chancery-lane from the south boundary in Southampton Buildings of upwards of 200 ft. Still further additions northwards in the direction of Holborn will, however, shortly be carried out. These additions will absorb the premises of Messrs. Newton & Co., patent agents, which will be cleared away in a few weeks on Messrs. Newton & Co. removing to the new offices which have been erected for them in Bream's Buildings. Other premises still further northwards in the direction of Holborn have likewise been secured by the owners of the Victoria and New Courts Chambers, and the site is now being cleared for the purpose of still further additions being made to the Chambers. When all the works are completed these chambers will have a frontage to Chancery-lane of about 300 ft. in length, extending upwards of 100 ft. in depth into the east side of Southampton Buildings. They will occupy a ground area of about 30,000 ft., the five floors covering an aggregate floor space of nearly four acres, and containing between 500 and 600 offices and chambers.

Sanitary Institute of Great Britain.—The following gentlemen have accepted the Presidentship of the Sections of the Sanitary Congress to be held in Dublin in the autumn:—Section 1. Sanitary Science and Preventive Medicine, Thomas Wrigley Grimshaw, M.D., Registrar-General of Ireland. Section 2. Engineering and Architecture, Charles P. Cotton, M.Inst. C.E., Engineering Inspector Local Government Board. Section 3. Chemistry, Meteorology, and Geology, Charles A. Cameron, M.O.H., Dublin. The Exhibition of Sanitary Apparatus and Appliances in connexion with the Congress will remain open for three or four weeks.

Electric Lighting.—Tenders are to be invited from a limited number of French electric lighting companies for supplying lamps to light the Halles Centrales. Endeavours are being made to organise an exhibition of electrical appliances, &c., in Brussels. The Belgian Society of Electricians, the Town Council of Brussels, and the Union Syndicale of that town have all been asked to forward the project. The new Houses of Parliament in Cape Town are to be lighted on the Edison system. Mr. Hortsek left this week to superintend the fitting up of the installation.—*The Electrician.*

British Archæological Association.—The eighth meeting of the session was held on the 19th inst., Mr. Thos. Morgan, F.S.A., in the chair. It was announced that the annual congress would be held at Tenby, when visits would be paid to many of the surrounding places of interest, including, most probably, St. David's. The progress of arrangements for holding an Exhibition of Antiquarian Objects in the Albert Hall, a portion of the International Health Exhibition, were detailed, and Associates were invited to contribute articles. Mr. Loftus Brock, F.S.A., exhibited a quaint Grès de Flandres jug of the seventeenth century. The Rev. C. Collier detailed the progress of the works for the new railway between Whitchurch and Fullerton, which have revealed several human interments, thought to be those of combatants after a battle fought 1001. The Rev. Alex. Taylor reported the discovery of the interment of a prehistoric man buried 45 ft. deep at Tilbury. Flint implements were found at the same time. Mr. C. H. Compton described a remarkable wooden figure of Mediæval date recently found in Petticoat-square, in the City of London, at a great depth. The discovery of the hypocaust of a Roman building in Paternoster-square was reported by Mr. Patrick, and a great quantity of remains were exhibited, showing the whole arrangement of the structure, portions of the hot-air flues, and a pavement of common red tesseræ. Large roofing-tiles had been used instead of bricks as a support for the paving above the pillars of the furnace. Mr. W. H. Cope described some fine specimens of German glass. A paper was then read by the Chairman on the landing-place of Cæsar on the Kentish shore. After detailing the many theories that have been put forward on this subject, reference was made to Cæsar's own narrative, and the importance of Halley's calculations dwelt upon. Assuming that the port of debarkation was Wissant, the "nearest way across" would have brought Cæsar to Dover. Halley has shown that the tides must have taken him east of that port, and Cæsar's description of the country points, therefore, to the locality near Deal as the landing-place.

The Statue of Charles I. at Charing-cross.—Its story is singular,—almost as singular as that of the statue of the Merry Monarch himself, which loyal Sir Robert Viner, "Alderman, Knight, and Baronet," put up in the old Stocks Market. It appears to have been executed about 1633, by Hubert Le Sœur, a pupil of John of Bologna, for the Lord High Treasurer Weston, who intended it to embellish his garden at Roehampton. By the terms of the commission it was to be of brass, a foot larger than life, and the sculptor "was to take advise of his Maj. (Charles I.) riders of greate horses, as well for the shape of the horse and action as for the graceful shape and action of his Maj. figure on the same." Before the beginning of the Civil War, according to Walpole, the statue, cast but not erected, was sold by the Parliament to John Rivett, brazier, living at the Dial near Holborn Conduit, who was strictly enjoined to break it up. Rivett, whose "faith was large in time," carefully buried it instead, and ingeniously exhibited some broken brass in earnest of its destruction. Report further says thnt, making capital out of both parties, he turned these mythic fragments into knife and fork handles, which the Royalists bought eagerly as relics, and the Puritans as tokens of the downfall of a despot. In any case there is evidence to show that the statue was still in Rivett's possession in 1660, and it is assumed that it passed from him or his family to the second Charles. Strype says that he presented it to the king, which is not unlikely.—*English Illustrated Magazine.*

Archæology at the Health Exhibition—It has been proposed by the Council of the British Archæological Association to hold an exhibition of ancient articles in the Albert Hall, as a part of the International Health Exhibition. These articles will be contributed by the Associates, and will be classified in a similar manner to the modern works, which will form the exhibition proper. Here will be displayed articles of the chase from remote to modern times, table art, articles of pottery of all ancient dates, and personal ornaments, so far as they relate to the objects of the exhibition. A good display of articles is expected, and already many of public interest have been promised. An influential committee has been appointed to carry out the undertaking.

The Telephone with reference to House Property.—One of the most interesting problems in connexion with this wonderful instrument is that relating to the increased value of house property in back streets consequent upon the facility of intercourse allowed by the telephone. Merchants are beginning to realise that whilst it may be advantageous to have their counting-houses and offices in a front street, the store or factory may readily be hundreds of yards distant,—up a narrow alley it may be, but as readily accessible by telephone as it used to be by speaking-tube. In this way we are credibly informed that one large firm are saving over 1,000*l.* a year in rent by having their factory and stores in a place where hitherto rents have been low, and where a large building lay vacant. To the universal provider, who deals in everything under the sun, and has hundreds of workmen employed in different classes of work, the telephone is invaluable. A lady customer writes to know when her dress will be finished; the assistant simply calls up the dressmaker who is superintending the workshop. It may be half a mile distant, but she at once knows how long it will be before the dress will be sent home. So with cabinet work, the foreman in the workshop is able in a minute to reply to any inquiry made at the counter, whatever the distance. It, therefore, is a matter well worth considering by the several vestries, whether any attempt to exclude their district from the benefits of the telephone may not prove in the end as disastrous to them as did similar attempts in the earlier history of railways to keep the railways away from the towns. The towns, and not the railways, have proved the sufferers, and it may be that the course of trade will follow the line of the least opposition, and workshops and factories will be established in those parishes where telephonic communication is the easiest. The problem is an interesting one, and well worth the consideration of owners of what may be called "back property."—*Postal and Telephonic Gazette.*

Pier-work.—The sixth of a course of lectures on "General Engineering Construction," by Mr. J. W. Wilson, jun., vice-principal of the Crystal Palace School of Practical Engineering, was delivered on the evening of March 20, in the reading-room of the Society of Engineers, Victoria-street, Westminster; Mr. Perry F. Nursey, vice-president, in the chair. The lecturer began by speaking of the old form of open-timber pier-work, with its few recommendations and many disadvantages, and especially of the various causes of its deterioration and their remedies. After considering the driving in various ways of the different kinds of timber-piles, he proceeded to the subject of iron pier-work, drawing attention to the general mode of combination of wrought and cast iron in their construction, with the advantages and disadvantages of each, and to the different forms of iron columns and piles, and their different modes of sinking. Attention was next directed to the superstructure, the arrangement of bays and nests, diagonal bracing and lateral stiffening, deck and framing, deck structures, &c.; and the lecturer pointed out, by means of plans of existing structures, the variations which occur in pier-work as regards length, breadth, elevation, position, and form of head, concluding with some general remarks as to the position of piers and their cost.

The Regent's Canal and City Railway Company and the Barbican Station.—When the Regent's Canal, City, and Docks Railway Company obtained their Act of Parliament some three years since, they entered into an arrangement with the St. Luke's Vestry for the purchase of the vacant land in Golden-lane, in order to build upon it their terminal station in Barbican; but the erection of a station on this site appears now to be doubtful. Up to the present time it seems that the railway company have failed to carry out their agreement with the vestry, and there is some probability that the site in question will ultimately be occupied by a Board School, the School Board having been in communication with the vestry for the purchase of the site. The Board, having inquired whether the vestry were prepared to sell the land for Board School purposes, the vestry have placed themselves in communication with the railway company, as to whether it is their intention to complete the purchase. Should the company decline to do so, we understand that the land will be sold to the School Board.

The Richmond Water Supply.—A Local Government Board inquiry is to be held on the question of the Richmond water supply on April 3, when Major Tulloch will attend. It is to be hoped, in the interests of the ratepayers, that a searching investigation will be made into the circumstances of the sinking of the well, which, as far as favourable results go, appears to be an utter and complete waste of public money. By the last accounts, the well has now reached a depth of 1,334 feet, and all that is to be shown for it is a yield of water at the rate of 5¾ gallons per minute. The contract depth for the Richmond sinking was 1,234 feet, and it has now therefore been exceeded by 100 feet. Wells sunk under similar conditions in the London basin, such as the Hampstead Company's artesian well at Kentish Town and the Meux Brewery well at Tottenham-court-road, were both discontinued at the depths respectively of 1,302 feet and 1,144 feet, it being the opinion of experts that it was useless to make any further outlay. It is true that in the Paris basins wells have been sunk of much greater depth than any of the London basin wells, such as that at Passy, which was sunk 1,913 ft. before water was reached. But however interesting the question is from a geological point of view, it must be remembered that for the last six years the water committee of the Richmond Vestry has been blindly working, and that an expense of more than 60,000*l.* has been incurred; and when it is considered that the Kentish Town well, which was unsuccessful, cost only 7,000*l.*, and even the Passy well, with all the indifferent appliances and scanty experience in the well-sinking of that day, cost but 40,000*l.*, it is not to be wondered at that the ratepayers of an already heavily-burdened town are becoming seriously uneasy about the aspect of affairs.—*Times.*

New Buildings in Drury-lane.—Extensive new premises for Messrs. Leighton Bros., chromatic printers, are at present in course of erection in Drury-lane, to which they have a considerable frontage. The building immediately adjoins the north side of the disused St. Martin's burial-ground, which some years ago was laid out as a recreation garden. It has a frontage to Drury-lane 60 ft. in length, and contains four lofty floors, in addition to a deep basement, in which the machinery is intended to be placed. The elevation is 68 ft. in height to the apex of the gables at the north and south angles, the style of architecture partaking of a Gothic character. The base of the frontage is faced with Cliff's glazed brick and red terra-cotta. At the north and south sides of the ground-floor part of the frontage there are lofty Gothic arches springing from polished Aberdeen granite piers, the spandrels being filled in with Brown's ornamental brick. The upper portions of the frontage are faced with terra cotta and red brick. Each floor has a range of three-light mullioned windows. The surmounting gables at each end of the frontage enclose three-light Gothic windows, ornamented with Brown's moulded bricks. The building extends backwards upwards of 100 ft., and has an entire floor area of nearly an acre in extent. Messrs. Lander & Bedells, of John-street, Bedford-row, are the architects; and Messrs. James Brown, Son, & Bloomfield the contractors. Mr. W. Crossley is foreman of the works.

Clocks and Bells.—Messrs. John Smith & Sons, turret clock makers, of Derby, have just erected in Churcham Church, near Gloucester, a large clock which strikes the hours upon a 17 cwt. bell, chimes the quarters, and shows time upon a 5 ft. dial. The same firm have also just finished a large clock at Boughton Church, near Northampton. Both clocks have all the latest improvements, and are constructed after the designs recommended by Sir Edmund Beckett, bart, Q.C. They are not expected to vary above two or three seconds in a week.

Hyde (Manchester).—A reredos in mosaic, in memory of the late Mr. J. Horsfield, has been erected in St. George's Church, Hyde. There are three divisions; in the centre is a marble cross, surrounded by passion-flowers on a cream-coloured ground; the other two divisions are divided by the vine and corn from the centre, and contain, enclosed in circles, the heads of the four Evangelists on a gold ground. On the right and left are the figures of Aaron and Melchizedec in colour on gold grounds. The reredos was designed by Mr. T. W. Camm, and executed by Messrs. R. W. Winfield & Co., Cambridge-street, Birmingham.

National Expenditure on Paper and Printing. — The original estimate of the Stationery Office for the year expiring on the 31st instant was 539,110*l.*, or 10,000*l.* in excess of the sum similarly expended during the financial year 1882-83. The supplementary estimate now submitted for the same department represents a further sum of 30,629*l.*, thus bringing up the total disbursements of the Stationery Office to 569,736*l.* About two-thirds of the amount of the supplementary vote asked for is on account of the General Post-office and the Patent Office, the excesses being due to the introduction of the Parcels Post, and to the passing of the new Patent Act respectively. Let it not, however, be supposed that the before-mentioned sum represents the total outlay of the Government on account of paper and print; for a number of Civil Service departments arrange for their own printing, independently of the Stationery Office; and their expenditure under this head may, broadly speaking, be put down as 243,000*l.*; thus giving a gross total of 812,739*l.* The import of these figures will be better realised when we mention that the civil administration of this country involves an expenditure on account of paper and printing nearly equal to one-third of the total national revenue of the kingdom of Denmark.—*Printing Times and Lithographer.*

TENDERS.

For alterations to front of Local Board Offices, Beckenham. Mr. G. B. Carlton, Assoc.-Mem. Inst. C.E., engineer and surveyor:—

	Plan A.			Plan B.		
Webb & Ross	£478	10	0	235	15	0
H. Copeland, Beckenham	475	0	0	283	0	0
J. Barnett, Shortlands	469	5	0	283	4	0
T. W. Jones, Beckenham	465	0	0	254	0	0
H. Leach, Shortlands	440	19	0	276	0	0
D. D. & A. Brown, Camberwell	399	0	0	265	0	0
G. B. Marshall, Brighton	350	0	0	250	0	0
Engineer's estimates	350	0	0	175	0	0

For the erection of the northern two-story cages of the Liverpool Zoological Gardens (contracts 4 and 5). Messrs. W. Sugden & Son, architects, Leek:—

The Everton Quarry Company, Liverpool, and Hutchison & Co., Clayton, Manchester	£2,850 0 0

For the erection of lodge, worksheds, brick boundary-walls, and iron fencing, to enclose the Woolwich Cemetery and additional lands, near Plumstead Common, for the Woolwich Burial Board. Mr. H. H. Church, architect, Woolwich. Quantities supplied:—

Kirk & Randall, Woolwich	£6,540 0 0
Tillbrook, Crouch-end	5,652 0 0
Avard, Maidstone	5,648 0 0
Coombs, Plumstead	5,498 0 0
Wright, Woolwich	5,490 0 0
Lonergan Bros., Plumstead	5,350 0 0

For alterations and additions to the Old Bay Tree public-house, Vicarage-lane, West Ham, E., for Mr. W. Geary. Mr. A. Birt, architect, Peckham-rye. Quantities not supplied:—

Harvey, Peckham-rye	£523 0 0
Hosking, Stratford	469 0 0
Sanders, Peckham-rye	346 0 0

For rebuilding business premises in Castle-street, Hastings. Mr. A. W. Cross, architect, Hastings:—

Avis (accepted)	£250 0 0

For new bar fittings, &c., at the Old Golden Cross Tavern, Hastings. Mr. A. W. Cross, architect:—

Avis (accepted*)	£168 14 4

* Exclusive of pewterer's work.

For the erection of a school chapel in Portland-street, Lincoln. Messrs. Bellamy & Hardy, architects. Quantities supplied:—

Martin & Sims	£1,250 0 0
Harrison & Sands	1,154 0 0
Allman	1,138 13 9
Middleton	1,114 10 0
Baines	1,069 0 0
Horton	1,022 10 0
Crosby & Sons (accepted)	1,019 0 0

For erecting a pair of villa residences at Harpenden, Herts, for Mr. T. Elmes. Mr. J. R. Brown, architect, Luton:—

C. Miskin, St. Alban's	£1,460 0 0
R. Etheridge, St. Alban's	1,369 0 0
R. Ranson, Arlesey	1,303 0 0
F. White, Dunstable	1,290 0 0
D. Dunham, Luton (accepted)	1,250 0 0
D. Parkins, Luton*	1,248 0 0

* Did not include sinking for well.

For alterations and additions to 1, Campden House-road, Kensington, for Mr. J. Forster Allcock. Mr. J. T. Bressey, architect:—

S. C. Parmenter	£1,250 0 0
T. Boyce	1,093 0 0
Larter & Son	1,048 0 0
Rider & Son	1,028 0 0
Harris & Wardrop	992 0 0

For new factories, Tabernacle-walk, for Messrs. Lawes & Co. Mr. John T. Bressey, architect:—

A. Reed	£4,700 0 0
S. Parmenter	4,432 0 0
Y. Boyce	4,200 0 0
Rider & Son	4,198 0 0
Larter & Son	4,104 0 0
Harris & Wardrop	3,844 0 0

For wings and additions to Cann Hall-lane Board School, to accommodate 369 children. Mr. John T. Bressey, architect:—

Bottoms Bros., Battersea	£2,836 0 0
C. J. Bartlett, Fulham Palace-road	2,820 0 0
D. C. Jones & Co., Gloucester	2,749 0 0
T. Russell, Forest Gate	2,690 0 0
J. Carley, Stratford	2,689 0 0
W. Gregar, Stratford	2,677 0 0
W. J. Hack, Poplar	2,597 0 0
D. D. & A. Brown, Camberwell	2,595 0 0
G. J. Hoskings, Forest Gate	2,579 0 0
A. Reed, Stratford	2,575 0 0
Harris & Wardrop, Limehouse	2,384 0 0
J. R. Hunt, Bow Common	2,315 0 0
Priestly & Gurney, Hammersmith	2,294 0 0
J. J. Robson, Woodford*	2,279 0 0
J. Brickell, Manor Park	2,150 0 0
F. Smith, London	2,015 0 0

* Accepted, subject to approval of Education Department.

For sewering, levelling, paving, metalling, channelling, curbing, and making three streets, at Ilkeston, Derby, for the Ilkeston Local Board. Mr. Charles W. Hunt, surveyor to the Board:—

John Cope, Ripley	£349 14 0
Beardsley & Pounder, Ilkeston	307 0 0
John Hawley, Ilkeston	303 13 8
William Cordon, Nottingham*	239 0 0

* Accepted.

For new class-room to National Schools, Wooburn, Bucks. Mr. Arthur Vernon, architect, Great George-street, Westminster, and High Wycombe:—

Woodbridge	£334 0 0
Gibson	295 0 0
Silver	294 0 0
Loosley	277 17 0
Hunt (accepted)	257 0 0

For reinstating No. 65, Cornhill, after damage by fire. Mr. R. Willey, architect, 66, Ludgate-hill:—

Bealby	£660 0 0
Woodward (accepted)	600 0 0

For reinstating No. 13B, Tabernacle-walk, Finsbury. Mr. R. Willey, architect:—

Holmes	£915 0 0
Bealby	490 0 0
Woodward (accepted)	425 0 0

For two new semi-detached houses, fronting the Green, Twickenham, for Mr. E. H. Brown. Mr. Thos. R. Richards, architect, 17, King-street, Cheapside. Quantities by the architect:—

Higgs & Hill	£2,328 0 0
Slade	2,130 0 0
Sims	2,100 0 0
Boyce	2,075 0 0
Harris & Wardrop	1,994 0 0
Messom	1,993 0 0
T. & W. Hickinbotham*	1,884 0 0

* Accepted, subject to modifications arranged.

For alterations and additions to "Dunraven," Ridgeway, Enfield, Middlesex, for Mr. G. Spicer. Mr. Rowland Plumbe, architect. Quantities not supplied:—

Fairhead	£1,064 0 0
Goodman	1,039 0 0
Patman Bros.	989 0 0
C. P. Mill	957 0 0

For terrace of six houses to be built in the Norwich-road, Cromer, Norfolk, for the Cromer Hall Estate Building Company (Limited). Mr. Ed. Jno. May, architect. Quantities by Mr. R. C. Gleed:—

Newman, Cromer	£4,125 0 0
Bird, London	3,969 0 0
Wegg, Norwich	3,910 0 0
Downing & Son, Norwich (accepted)	3,721 0 0

For new shop-front and alterations to No. 105, High-street, Kensington, for Messrs. Derry & Toms. Mr. Josiah Houle, architect:—

Drew & Cadman	£778 0 0
Kearly	734 0 0
Spencer & Co.	725 0 0
Bowles	679 0 0

For new Hospital for Infectious Diseases, Woodbridge, near Guildford. Messrs. Peak, Lunn, & Peak, architects, Guildford:—

Henry Ingram, Woking	£3,236 9 1½!
Pearce & Clark, Guildford	3,235 0 0
Garnett, Guildford	3,200 0 0
Mitchell Bros., Shalford	3,101 14 7
John Crook, Southampton	3,095 10 0
R. Pink, Milford	3,079 0 0
H. Loe & Son, Croydon	2,798 5 0
W. Smith & Sons, Guildford	2,696 10 0
Kingerlee, Banbury	2,687 0 0
Bull, Sons, & Co., Southampton	2,639 0 0
Martin, Wells, & Co., Aldershot	2,630 8 8
Forster & Dicksee, Rugby	2,629 0 0
G. Strudwick, Guildford	2,627 9 0
P. Peters, Horsham	2,534 10 0
John Bottrell, Reading (accepted)	2,505 0 0

For widening, paving with Imperial stone and granite kerb and channel, as per schedule, a part of the High-street, Colchester, for the Corporation:—
C. H. Oldridge (accepted).

For new nurses' rooms, &c., for the Board of Guardians of the Whitechapel Union. Mr. W. A. Longmore, architect, 7, Great Alie-street, E.:—

Loveday	£1,630 0 0
Castle	1,547 0 0
F. & F. J. Wood	1,483 0 0
R. Rayner	1,450 0 0
M. Calnan & Co.	1,445 0 0
Little	1,415 0 0
S. J. Scott	1,373 0 0
Palmer & Co.	1,359 0 0
McGee & Co.	1,357 0 0
E. C. Howell & Son	1,350 0 0
Tagg	1,339 0 0
W. Shurmur	1,287 0 0
Hawkings	1,235 0 0
Gladding	1,198 0 0
J. R. Hunt	1,156 0 0
W. H. Pyle & Co.	1,070 0 0

For house for Mr. W. H. Manser, at Newmarket. Mr. Wm. C. Manning, architect, Newmarket. Quantities by Mr. Bagg:—

Wilkes Bros.	£2,598 0 0
Kinninmont	2,525 0 0
Brass	2,510 0 0
Jacklin	2,500 0 0
Holland & Hannen	2,500 0 0
Boyce	2,489 0 0
Nightingale	2,480 0 0
Lawrance & Sons	2,430 0 0
Dove Bros.	2,375 0 0
Bell & Sons	2,278 0 0
Thackray	2,189 0 0

For new training-establishment at Newmarket for Mr. C. Wood. Mr. W. C. Manning, architect, Newmarket. Quantities by Mr. Bagg. (Second competition):—

Warboys, Bassingbourne	£7,120 0 0
Wilkes, Buckingham Palace-road	6,998 0 0
Boyce, Eagle Works, Hackney	6,630 0 0
Prime, Cambridge	6,487 0 0
Tuhey, Newmarket	6,484 0 0
Jacklin, Royston	6,474 0 0
E. Lawrance & Sons,* Wharf-road, N.	6,398 0 0

* Accepted.

For the enlargement of Wesleyan Mission premises, Gillespie-road, Blackstock-road. Mr. F. Boreham, architect:—

Richards	£1,290 5 0
Woodward	1,219 0 0
Shurmur	1,143 0 0
Holloway	1,088 3 0
Roberts	1,087 0 0

For the erection of two shops at Walthamstow. Mr. John Hamilton, architect:—

S. J. Scott	£2,973 0 0
W. Shurmur	1,998 0 0
J. Harper	1,992 0 0
Reed	1,986 0 0
Fuller	1,891 0 0
Good Bros.	1,750 0 0

For the erection of a school at Park-road, Greenwich, for the London School Board. Mr. E. R. Robson, architect:—

Staines & Son	£9,777 0 0
W. Shurmur	9,750 0 0
Perry & Co.	9,010 0 0
H. L. Holloway	8,990 0 0
H. Hart	8,979 0 0
Stimpson & Co.	8,979 0 0
W. Downs	8,978 0 0
W. Brass	8,936 0 0
Patman & Fotheringham	8,888 0 0
W. Scrivener & Co.	8,884 0 0
Lathey Bros.	8,869 0 0
G. Grover	8,846 0 5
C. Wall	8,829 0 0
Wall Bros.	8,815 0 0
Kirk & Randall	8,778 0 0
E. C. Howell & Son	8,736 0 0
S. J. Jerrard	8,633 0 0
W. Bangs & Co.	8,590 0 0
Atherton & Latta	8,500 0 0

For the enlargement of school, Stockwell-road, Lambeth, for the London School Board. Mr. E. R. Robson, architect:—

F. & F. J. Wood	£5,882 0 0
W. Shurmur	5,496 0 0
Kirk & Randall	5,294 0 0
J. Marsland	5,237 0 0
W. Downs	5,178 0 0
W. Goodman	5,105 0 0
W. Johnson	5,069 0 0
E. C. Howell & Son	5,034 0 0
W. Scrivener & Co.	4,996 0 0
Perry & Co.	4,982 0 0
J. Grover	4,963 0 0
Lathey Bros.	4,932 0 0
W. Brass	4,919 0 0
Wall Bros.	4,883 0 0
S. J. Jerrard	4,866 0 0
B. C. Nightingale	4,832 0 0
W. Bangs & Co.	4,824 0 0
J. Rider Hunt	4,806 0 0
Atherton & Latta	4,700 0 0
Stimpson & Co.	4,690 0 0

For the erection of school at Ponton-road, Nine Elms, for the London School Board. Mr. E. R. Robson, architect:—

W. J. Mitchell	£15,191 0 0
W. Shurmur	12,370 0 0
W. Scrivener	12,167 0 0
J. R. Hunt	12,123 0 0
W. Johnson	12,057 0 0
W. Brass	12,031 0 0
Wall Bros.	11,994 0 0
Patman & Fotheringham	11,979 0 0
Turtle & Appleton	11,879 0 0
W. Bissett & Son	11,850 0 0
Lathey Bros.	11,846 0 0
J. D. Hobson	11,844 0 0
J. Grover	11,735 0 0
C. Wall	11,643 0 0
B. E. Nightingale	11,631 0 0
J. Marsland	11,614 0 0
Kirk & Randall	11,610 0 0
Hy. Hart	11,572 0 0
W. Tongue	11,514 0 0
Stimpson & Co.	11,500 0 0
W. Bangs	11,490 0 0
E. C. Howell & Son	11,467 0 0
W. Downs	11,444 0 0
S. J. Jerrard	11,443 0 0
W. Oldrey	11,377 0 0
Perry & Co.	11,328 0 0
Atherton & Latta	11,300 0 0

For rebuilding the Tulip Tree public-house, Kew Foot-road, Richmond, for Messrs. Thorne Bros. Messrs. Lee Bros. & Pain, Adelphi-terrace, architects:—

Parsons, Wandsworth	£1,297 0 0
Carless & Co., Richmond	1,269 0 0
Lathey Bros., Battersea	1,190 0 0
Turtle & Appleton, Wandsworth*	1,037 0 0

* Accepted.

For putting new galleries, &c., in Welsh Chapel, Sussex-road, Holloway. Mr. F. Boreham, architect:—

W. Goodman	£582	0	0
L. H. & R. Roberts	559	0	0
J. Holloway	545	0	0
J. Grover	544	0	0
Williams & Son (accepted)	537	0	0

For altering and repairing the Welsh Chapel, Stepney Mr. F. Boreham, architect:—

Spencer & Co.	£549	5	0
Richards	573	0	0
L. H. & R. Roberts (accepted)	464	0	0

For pulling down and rebuilding Nos. 53, 54, 55, and 56, Rathbone-place, and making sundry alterations and additions to No. 57, Rathbone-place, and No. 60, Oxford-street, for Messrs. Parkins & Gotto. Mr. Silvester C. Capes, architect, 16, Doughty-street. Quantities by Messrs. Karslake & Mortimer, 5, Great Queen-street, Westminster:—

Patman & Fotheringham	£7,573	0	0
Stanley G. Bird	7,499	0	0
Fish, Prestige, & Co.	7,386	0	0
G. Bywater	7,148	0	0
M. Manley	7,100	0	0
W. Scrivener & Co.	6,968	0	0
B. Nightingale	6,960	0	0
W. Brass	6,947	0	0
W. Downs	6,933	0	0
E. Lawrance & Sons	6,895	0	0

For new Sunday-schools, class-rooms, and alterations, Wesleyan Chapel, Hampstead. Mr. Chas. Bell, architect. Quantities by Mr. Henry Lovegrove, 26, Budge-row, E.C.:

Wall Bros.	£3,124	0	0
Watson	3,078	0	0
McCormick & Sons	3,055	0	0
Taylor & Grist	3,051	0	0
Allen & Sons	2,959	0	0
Burford & Sons	2,949	0	0
Anley, Dalston*	2,790	0	0

* Accepted for a portion of the work, omitting caretaker's house, &c.

For rebuilding Nos. 1 and 2, New-street, Bishopsgate. Mr. Chas. Bell, architect. Quantities by Mr. Henry Lovegrove:—

Lodge	£4,200	0	0
Gibbons	3,200	0	0
Rayner	3,075	0	0
Allen & Son	2,990	0	0
Anley	2,940	0	0
Shepherd	2,925	0	0
Woodward	2,920	0	0
Staines & Sons	2,884	0	0
Scrivener & Co.	2,814	0	0
Holliday & Greenwood	2,687	0	0
Smith & Sons	2,645	0	0
Green, Clapton (accepted)	2,637	0	0

For alterations and repairs to the Lord Derby public-house, New Cross, for Mr. Charles Bull. Mr. H. Roberts, architect:—

Mower	£288	10	0
Long	278	0	0
Holloway	269	0	0
Hubble & Trott	263	0	0
Taylor (accepted)	225	0	0
Rice	150	0	0
Scott	120	0	0
Pewterer's Work.			
Long	63	15	0
Banks (accepted)	55	0	0
Ruse	54	0	0

For building the Institute, Victory-place, Walworth. Mr. J. E. Sears, architect:—

Batley	£1,899	0	0
Marsland	1,845	0	0
F. Higgs	1,845	0	0
Downs	1,833	0	0
Tarrant & Son (accepted)	1,796	0	0

For reinstating the British Oak public-house, Oxford-street, Whitechapel. Mr. R. Willey, 66, Ludgate-hill, architect:—

Bealby	£550	0	0
Clarke & Bracey	447	0	0
Holmes	339	0	0

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